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ABSTRACT

A state-of-the-art assessment is presented of the number, training, and experience of scientific and paraprofessional personnel serving the criminal justice system as expert witnesses. The study concentrated on the following disciplines: criminalists, coroner/medical examiner personnel (especially forensic pathologists), forensic anthropologists, forensic odontologists, forensic psychiatrists, forensic toxicologists, questioned document examiners, and evidence technicians. The target population included individuals who had testified in criminal proceedings as an expert witness in any of the above fields, between 1969 and 1974. A total of 7,007 questionnaires were distributed; 1,958 were returned for a 28% response rate. This volume presents the survey results for each discipline: the speciality is defined; background characteristics of the respondents and terms of their employment are outlined. Problems noted by the specialists and their suggestions for improvement are also discussed. General findings and recommendations for the entire project--which also included a compilation of educational institutions and a survey of practicing judges and lawyers--are included. (MV)

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ASSESSMENT OF THE FORENSIC SCIENCES PROFESSION

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Assessment of the Personnel of the Forensic Sciences Profession

Volume II

National Institute of Law Enforcement and Criminal Justice
Law Enforcement Assistance Administration
U. S. Department of Justice

TM006 603

ASSESSMENT OF THE FORENSIC SCIENCES PROFESSION

Assessment of the Personnel of the Forensic Sciences Profession

Volume II

By

KENNETH S. FIELD - OLIVER SCHROEDER, JR.
INA J. CURTIS - ELLEN L. FABRICANT
BETH ANN LIPSKIN

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March 1977

National Institute of Law Enforcement and Criminal Justice
Law Enforcement Assistance Administration
U. S. Department of Justice

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OF THE
FORENSIC SCIENCE
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Project Staff Director

FOREWORD

It is hardly news to the reader that before you can successfully plan for the future of any organization or service you must be factually informed regarding such things as: the market for the services; budgetary and operational details related to the services provided; and a myriad of facts concerning the professionals who perform the services.

On a relative scale more is known about the market and operational matters related to the forensic sciences than is known about the scientists who perform the services. This assessment was undertaken to ascertain what is and what is not known, factually, about the professional personnel who constitute the forensic sciences work force.

It is emphasized that this project's primary mission was as stated in the April 1973 LEAA Newsletter, "... the assessment was designed to provide a state-of-the-art assessment of the number, training and experience of scientific and related para-professional personnel serving the criminal justice system."

Two points contained in the above quotation should be carefully noted. First, the project is a state-of-the-art assessment--meaning that if the available data (gathered within the constraints of project time and funds) are not conclusive, recommendations should be made as to what further studies are necessary.

Second, the project is only concerned with the criminal justice aspects of forensic science work performed by scientists. Accordingly, the involvement of the profession in civil and regulatory matters is not covered in this study.

In its early deliberations the Joint Advisory Committee (JAC) for the project made two additional decisions concerning the parameters of this assessment. First, the study would concentrate on the following disciplines or activities: criminalists and criminalistics laboratories, coroner/medical examiner personnel and operations (with emphasis on forensic pathologists); forensic anthropologists; forensic odontologists; forensic psychiatrists; forensic toxicologists; questioned document examiners, and evidence technicians.

The second JAC decision established that the target population of this assessment would be any individual who, during the period 1969-1974 had testified in criminal proceedings as an expert witness in any of the above fields--without pre-judging the qualifications of such individuals.

The three products of this report include a study of the laws that impact on forensic scientists, a series of rosters showing the educational opportunities available in the various forensic science disciplines, and the assessment contained in this volume. One desired product proved to be unattainable: a national roster of forensic scientists in the United States. It could not be made because in excess of 37% of the survey respondents did not identify themselves.

ACKNOWLEDGMENTS

The assessment could not have been accomplished had it not been for the work of the Joint Advisory Committee (JAC) and the thousands of forensic scientists who supported the survey. In particular, the JAC members dedicated hundreds of hours to the development of the philosophies expressed in this study and to the actual accomplishment of the assessment.

Special thanks are extended to the following individuals who assisted in the development of the chapters indicated: Dr. James T. Weston - Chapters II and III; Mr. Edward Whittaker - Chapters IV and V; Dr. Ellis R. Kerley - Chapter VI; Dr. Richard Souviron - Chapter VII; Dr. Irwin N. Perr- Chapter VIII; Dr. Irving Sunshine - Chapter IX; Messrs. David J. Purtell, James T. Miller, and Philip L. Schmitz - Chapter X; Mr. Donald Verbeke, Commissioner George W. O'Connor, and Mr. Andrew H. Principe - Chapters XI and XII.

No assessment of this nature and of this order of magnitude would ever have come to fruition without the support of a veritable army of data reductionists and analysts. In particular, thanks to Robert D. Albro and Marco A. Barriga.

Grateful acknowledgment is also made to Charles A. Foreman for his editorial work on the drafts and final report work and to Mary G. Wilson and Deborah A. Heath for their administrative support throughout the project.

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CHAPTER I

SUMMARY

GENERAL

In formulating the work to be done in this research project it was recognized that data had been assembled over the years concerning forensic science personnel.

Unfortunately, very little of it was usable for the design of profession-wide improvement programs because of three fundamental failings. Either the data was too old, or it applied to too narrow a geographical or organizational segment of the target population or the data was collected or assembled in such a way as to be incompatible with other data in a related field.

For all of these reasons it was deemed necessary to initiate a new survey, one that would be national in scope and would cover all forensic science personnel.

For this report a total of 7,007 questionnaires were distributed, of which 1,958 were completed and returned--representing a response rate of 28%.

Following is a summary of the project, including general findings and recommendations. In the chapters that follow, the survey results are presented by disciplines.

I. PROJECT PURPOSES

A. To provide a state-of-the-art assessment of the counseling, education, recruitment, training, and work experience of forensic scientists serving the criminal justice system in the United States.

B. To provide a similar state-of-the-art assessment of evidence technicians in their role as specialists in the search for physical evidence at crime scenes.

C. To make recommendations concerning the implementation of selected findings or to recommend further study of unresolved issues.

II. TASKS AND METHODS

A. Produce a study of the law as it applies to forensic science personnel.

  1. Conduct a search of appropriate literature.
  2. Conduct a survey of judges and lawyers--the consumers of forensic science services.
  3. Evaluate and assess the assembled quantitative and qualitative data and information.

B. Produce a study of the basic characteristics, education, and employment experience of forensic science personnel and of evidence technicians.

  1. Conduct a search for accomplished quantitative personnel surveys germane to this assessment.
  2. Conduct a search for literature on a broad range of personnel problems.

3. Conduct appeals for the names and addresses of all individuals who have testified in court as expert witnesses in fields germane to this study or who profess to be forensic scientists.
4. Conduct discipline oriented surveys of the thousands of individuals recorded in the preceding step.
5. Reduce, evaluate, and assess the assembled quantitative and qualitative data and information.

C. Produce a study of education available to forensic scientists.

1. Petition in excess of 1,000 educational institutions for catalogues and other information pertaining to their forensic science course, program, or degree offerings.
2. Conduct personal correspondences with educational institutions who responded to the repeated petitions.
3. Evaluate and assess the assembled data and information.

III. RELATIONSHIP TO OTHER RESEARCH

A. This personnel assessment serves as a companion to similar studies related to forensic science operations and facilities.

B. Selected data from this study constitute potential support material for related research.

C. Findings of this assessment constitute potential justification material for subsequent research or implementation projects.

IV. FINDINGS

A. PROTOTYPE

1. The average medicolegal professional is a male who normally works in private practice or in a hospital but who devotes approximately one-third of his time to criminally oriented medicolegal cases on a fee-for-service basis.
2. The average criminalist is a 38 year old male with approximately six years of experience in the field, who holds, at least, a bachelor's degree and works full time in a government laboratory.
3. The forensic anthropologist is a male who holds advanced degrees and whose primary position is not of a forensic nature. If he is a member of a university staff or faculty, he is approximately 41 years of age, and he generally has less than ten years of experience in forensic work. If he is affiliated with a museum he is older and has more years of forensic experience than his university contemporaries.
4. The forensic odontologist is a 48 year old male who has a private practice but has eight years of forensic experience and devotes approximately 10% of his time to forensic matters.
5. The majority of forensic psychiatrists are males who work in private practice but who derive approximately one-third of their income from forensic case work involving criminal proceedings.

6. The questioned document examiner fits one of two categories: either, he is qualified to serve as an expert witness almost exclusively in the areas of handwriting and disputed documents; or he is expert in those fields plus several others. The latter classification describes the majority of the examiners who testify in criminal cases. They are 43 years old, are employed by a government agency, hold a college degree and have 12 years of experience in the field.
7. The average forensic toxicologist is a 39 year old male who has a post graduate degree, who works for a state or county agency and has ten years of experience.
8. The evidence technician is a 36 year old male who holds an AA degree and has approximately four years of experience in the field of evidence technology at which he works approximately two-thirds of the time.

B. EDUCATION AND TRAINING

1. There are very few comprehensive (as opposed to orientation type courses) forensic science educational offerings available in educational institutions--either in terms of number or in the variety of subjects offered. There are still fewer degreed programs in forensic science.
2. The major means by which scientists gain professional competence in the forensic sciences is via on-the-job training, which is generally not formally structured (no lesson assignments or lesson plans).

3. As in the case of O-J-T, there are few formalized, planned, required, comprehensive continuing education programs (lectures, seminars, and workshops) available in any of the forensic science disciplines.
4. Many agencies offer some form of an educational allowance (tuition, text books, time off, etc.) to their forensic professionals, most of which is used to acquire a basic college degree.
5. The criminalistics discipline has the most diversified education and training requirements of the forensic sciences.
6. Only one forensic discipline, forensic pathology, has a formal, accredited residency program, which is, unfortunately, undersized.
7. Only forensic pathology has a formal, accredited board certification program.
8. There are no comprehensive educational programs and few educational courses for questioned document examiners or for evidence technicians--aside from orientation type courses.

C. STANDARDS AND CERTIFICATION

1. With the exception of the forensic pathologists, all of the forensic disciplines cited the need for qualification standards in their discipline and endorsed the concept of certification.
2. The individual discipline endorsements of the concept of certification included requirements for systems of periodic

recertification to include periodic examinations and programs of continuing education involving accredited courses.

3. The need for testing included written and oral tests, state-of-the-art tests, and proficiency testing.

D. PERSONNEL MANAGEMENT

1. The forensic science profession has a great need for but does not have a national statistical base of personnel information for use in education, training, or employment planning. It lacks a uniform reporting system to support such a base.
2. Many forensic science agencies and forensic science disciplines not normally associated with an agency are unable to provide even the most elementary types of personnel information for use as justification in local planning. When such information is available it is not usually assembled on a routine basis but rather as a "one-shot" affair.
3. The forensic sciences are unable to support with facts the contribution made by their personnel to the improvement in the quality of justice.
4. No sets of discipline approved model job titles and job descriptions are available in the forensic sciences.
5. There are no discipline approved model career programs in existence in the forensic sciences, to include standards for promotion.

E. COMMUNICATION

1. For all practical purposes, the American public is unaware that a forensic science profession exists--thus hampering growth programs (no public support), job counseling, recruitment, etc. Aside from one or two instances of passing references to legal medicine, none of the hundreds of counseling and management publications include any information or data on the forensic sciences. This includes private publications as well as Department of Labor Statistics. The LEAA "Sourcebook of Criminal Justice Statistics" does not include a single reference to any forensic science matters.
2. That small segment of the public that is aware of the name "forensic science"--is not aware of the capabilities of the profession.
3. The users of the services of the forensic sciences are woefully uninformed as to the state-of-the-art of the individual forensic science disciplines.
4. There is a critical lack of communications intra and inter-professionally within the forensic sciences.
5. No discipline-wide systems exist to identify fully qualified experts in forensic science matters.
6. Forensic Scientists do not support their profession journalistically--this is particularly true as it pertains to the development of an informed public.

F. RESEARCH

1. Few forensic scientists who are active in the field spend any time on research that is not oriented toward a specific case.
2. Very little money in agency budgets is earmarked for research--either in terms of time for scientists to devote to independent research or for equipment and expendables needed for specific projects.
3. Given that paucity of research effort, there is also no effort made to coordinate what little research is accomplished.
4. There is no mechanism in the forensic sciences for the establishment of a widely publicized discipline oriented priority list of research to be accomplished.
5. The United States has no national center at which research in all of the disciplines is accomplished.

V. GENERAL RECOMMENDATIONS (See Individual Chapters for Discipline Oriented Recommendations)

A. CERTIFICATION

1. A Forensic Science Certification Planning and Implementation Project should commence without delay. Planning and initial implementation funds should be sought for each discipline within the forensic science profession--recognizing that certification in some disciplines will be relatively easier to plan and accomplish than in others.

B. PERSONNEL DATA REPORTING SYSTEM

1. Immediate steps should be taken to plan and implement a national personnel data reporting system designed for use in local, regional, and national short term and long range planning. Such a personnel system would also support the planning needs of educational institutions and of related elements of the justice system. Included would be provision for standardized information on the current labor force, employment hours, earnings, employee benefit programs, job vacancies, education, training, lateral transfer, labor turnover, budgets, per capita and productivity data for measurement of effectiveness and efficiency, operational environment, and trends.

C. STANDARDS

1. Concurrent with the above two studies, standards that are specifically designed to recognize variations in local

conditions should be established for such areas as: entry into a profession; promotion/retention; job titles and descriptions; and terms commonly used in personnel work, e.g., casework/caseload/examination, etc.

2. As a matter of urgency, each forensic science discipline (in conjunction with concerned educational institutions and other organizations that conduct public continuing education and training programs) must commence the design of voluntary minimum standards for forensic science education and training--to include standards for curricula, course content, faculty qualifications, and facilities. Optimally, such a program should be implemented concurrently with the implementation of certification programs--on the theory that the system will only be as strong as its weakest link.

D. COMMUNICATIONS

1. Each forensic science discipline should take immediate steps to produce at least one state-of-the-art periodical for its own discipline. Such periodicals should be topical, cover a wide spectrum of subjects, and be inexpensive.
2. The Forensic Science Profession, as an entity, should produce a general state-of-the-art monthly periodical for the profession as a whole, for related services, and for the general public.
3. A structured system of orientation programs should be cooperatively developed with and for judges, lawyers, and law

enforcement agencies--this system to be capable of periodic update. Such a system could include: active local and regional speaker's bureaus; slide shows; movies; video tapes--whatever is determined to be the best vehicle for the target audience.

4. A short audio/video forensic science orientation program should be created for service organizations (Rotary, etc.) and for educational counseling services. Ideally, this "show" would be scheduled in conjunction with a presentation by a member of the earlier mentioned speakers bureau.

E. RESEARCH

1. A research information clearinghouse should be established for the forensic sciences as a means to achieve coordination of research effort. In particular national programs and those sponsored by State Planning agencies should be included.
2. Based on recommendations from the field plus the information provided by the clearinghouse operation, the forensic science profession should prepare an annual, coordinated, priority list of recommended research to be accomplished. This list should be given wide distribution in the public and private sector.

F. ORGANIZATION

1. The forensic sciences should select, from among its many discipline oriented, regional, or national professional organizations, one to serve as an informal federating agent

for the profession as a whole. The current (and warranted) proliferation of special-interest organizations, coupled with an inevitable growth in the profession as a whole, indicates the importance of early consideration of this matter.

VI. PROPOSED REPORT DISTRIBUTION

Report: "The Forensic Sciences In American Criminal Justice--A Legal Study Concerning The Forensic Sciences Personnel"

It is recommended that the above report, less Appendix D, be distributed as follows:

5,500 -- Judges and Lawyers comprising the original mailing list for the survey.
1,500 -- American Academy of Forensic Sciences
250 -- American Academy of Psychiatry and The Law
150 -- Approved Law Schools in the U.S.A.

Report: "A Survey of Educational Offerings in the Forensic Sciences"

It is recommended that Roster I of the above report receive the following circulation:

1,500 -- American Academy of Forensic Sciences
1,000 -- University and College Counseling Service Offices
500 -- State Planning Agencies, State Departments of Education, State Justice Departments, etc.
250 -- Related Professional Societies
250 -- Criminalistic Laboratories
250 -- Coroner/Medical Examiner Offices
250 -- Major Law Enforcement Agencies in U.S.A.

Report: "Assessment of The Personnel of The Forensic Sciences Profession"

It is recommended that the above report be distributed as follows:

2,500 -- Individuals and organizations who participated and assisted in the project
3,000 -- Regional and local organizations associated with the forensic sciences
1,000 -- Law Enforcement Agencies
500 -- Forensic Science Laboratories or Offices

CHAPTER II

INDIVIDUAL QUESTIONNAIRE
CORONER AND MEDICAL EXAMINER PROGRAM

DEFINITION

Pathology is the study of disease. Forensic pathology is the special application of pathology to the courtroom. In particular, it is concerned with the investigation and interpretation of injury and death resulting from violence or wherein it occurred suddenly, unexpectedly, or in an unexplained manner. The forensic pathologist presents scientific evidence gathered from postmortem examinations and investigations in civil, criminal and regulating litigation.

SURVEY - BACKGROUND

The material summarized in this chapter is the product of a survey taken in 1974-1975. The Questionnaire was mailed to the membership of the National Association of Medical Examiners, the International Association of Coroners and Medical Examiners, plus the members of the Pathology/Biology Section of The American Academy of Forensic Sciences. In addition, a large number of individuals voluntarily submitted their names to receive questionnaires. These volunteers were solicited through notices placed in approximately 400 professional news letters and journals distributed within the United States.

Responses are as follows:

Questionnaires Mailed	Responses	% Response
825	356	43%

As can be seen from the responses to the first three questions, the respondents are representative of the total number in the profession.

FINDINGS

- There are no model sets of medicolegal job titles and job descriptions for use in developing meaningful statistical data for the comprehensive study of discipline-wide personnel management. Model titles, etc., would provide a means by which locally preferred titles could be equated to a common base for statistical reporting purposes.
- As one factor in the need for educational opportunities in forensic pathology, a requirement exists for more residencies in this discipline.
- Because of existing recertification requirements, medicolegal personnel so affected will opt for those meetings that have attained an accredited rating for certification purposes.

- On-the-job-training is consistently rated high by medicolegal personnel. This is not unusual since it represents the significant means by which personnel become qualified in the field.

- The medicolegal community does not support its profession journalistically.

- The average medicolegal agency employee is a non-civil service employee; who is paid on a fee-for-service basis; works in private practice or in a hospital or medical center; spends a third of his time on medicolegal cases, the majority of which involve criminal proceedings.

- The hospital is the most common site at which medicolegal post-mortem examinations are conducted, but this arrangement is not favored by most coroner/medical examiner professionals.

- The greatest amount of coroner/medical examiner office time (64%) is devoted to pathological examinations and ancillary studies. The next most time consuming task is spent on the initial investigation of the case.

- If the Coroner or Medical Examiner (or a professional peer) cannot conduct the investigation of a case, a trained investigator (non-physician) from the coroner's/medical examiner's medical unit is preferred -- with a trained police officer ranked second.

- Whereas, the responsibility for the determination of the extent of examination (whether or not an autopsy should be conducted) and for the certification of cause and manner of death often rests outside of the medical community (41% of the time), the respondents overwhelmingly agree that it should be performed by a physician operating out of the coroner's/medical examiner's office.

- The minimum education and training requirements for medicolegal professionals favored by the respondents included: Board Certification in Anatomic Pathology; and either a residency program of one year or one year of O-J-T in Forensic Pathology.

- Less than half of the respondents favored a requirement for certification in Forensic Pathology.

- The unanimous opinion was that there should be one additional year of training either in a Forensic Pathology residency or in an O-J-T program. (Again, there may be confusion and commingling of those who considered formal residency in Forensic Pathology as O-J-T.)

- Workshops and seminars are needed for the consumers of coroner/medical examiner services.

- An organized system of timely communications (emphasizing the state-of-the-art) is needed for the promulgation of medicolegal professional information within the profession, interdisciplinarily, and with law enforcement agencies, trial lawyers, and judges.

RECOMMENDATIONS

- A manpower study is urgently needed to ascertain factually, what service is being accomplished, by whom, using what resources (men/money/material). In conjunction with this, a model productivity measurement system should be developed for agency use

- Model sets of job titles/descriptions should be created -- together with model salary structure -- all modularized to accommodate local conditions.

- Standards for certification of non M.D.'s should be established to allow recognition of expertise and exchange of personnel.

- A personnel management data reporting system should be created and implemented -- for individual agency use in support (justification) of personnel planning and to assist in answering the age old question, "What contribution does forensic science make to the improvement in the quality of justice?"

- A 5 and 10 year quantitative manpower and service forecast or trend analysis is needed for all agency budget preparations and for educational/training planning (with its built-in extended lead times).

- A systematic medicolegal program to gain public support is urgently needed. It would be the catalyst for increased resource support for medicolegal services, e.g., capital improvement, increased operational and research budgets, raised personnel ceiling. Included would be audio/video material, regional speakers' bureaus, state-of-the-art news releases. In marketing, this is referred to as "impetus from the rear."

- Sets of model standards for entry and promotion qualifications must be designed and implemented -- as a means to upgrade the quality of service currently being offered and as a basis for education and training planning.
- As a matter of priority, a quantitative study should be made of the need for and design of educational programs in medicolegal subject areas, particularly forensic pathology -- to include, curriculum requirements (electives), residency program requirements, board certification, O-J-T and continued education to meet recertification, accredited standards and state-of-the-art advances.
- Model curriculum should be designed, and O-J-T courses content should be created for the medicolegal profession (professional and support personnel) -- reflecting the standards previously discussed and accommodating the accreditation requirements of certification/recertification.
- Audio/Visual education (orientation) material covering medicolegal investigations should be developed for law enforcement personnel for use in seminars and workshops.

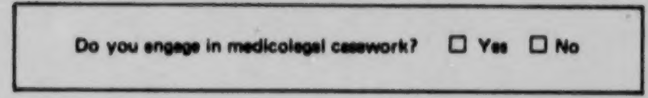
- Similarly, packaged instructional material should be developed for presentation to the consumers of medicolegal services, e.g., trial lawyers and judges.

- A system of continuous communication covering advances in the state-of-the-art should be implemented for intraprofessional use, for exchange with related disciplines within and outside the forensic sciences, for law enforcement agencies and service consumers and for the public. The intraservice device might be an insert in the newsletter of professional societies concerned with the medicolegal profession. The interdisciplinary needs, as well as consumer needs, could be accomplished through a network of professional society liaison teams, program exchanges, etc. The law enforcement needs could be satisfied through the development of material appropriate for use at roll calls.

- A concerted, coordinated effort must be made to develop regular sources of research funding. To enhance this effort, an annual, comprehensive, all inclusive list of priority topics should be developed, together with an available mechanism for the coordinated review of proposals submitted. Included in the research grants should be the provisions for "Acorn" grants covering relatively smaller yet vital research projects.

SURVEY RESULTS

1. QUESTION:



Do you engage in medicolegal casework? ☐ Yes ☐ No

Response:

- 91% - Yes
  9% - No

Response Analysis:

- Further investigation of the 9% who indicated that they do not engage in medicolegal casework showed that they are involved in medicolegal activities such as administration.

2. QUESTION:

Which of the following most closely describes your title when doing medicolegal work?

- ☐ **Medical Examiner**
- ☐ **Assistant Medical Examiner**
- ☐ **Autopsy Surgeon**
- ☐ **Medical Investigator**
- ☐ **Coroner (Physician)**
- ☐ **Coroner (Non-Physician)**
- ☐ **Assistant (Deputy) Coroner**
- ☐ **Investigator**
- ☐ **Pathologist for Coroner or Medical Examiner**

Response:

- Of 356 responses the following is the distribution of answers:

  28% - Medical Examiner

  11% Asst. Med. Examiner

  08% - Autopsy Surgeon

  03% - Medical Investigator

  30% - Pathologist

  11% - Coroner (Physician)

  04% - Coroner (Non-Physician)

  03% - Asst. (Dep.) Coroner

  02% - Investigator

Response Analysis:

- Further analysis reveals that 90% of the respondents were physicians.

Finding:

- In terms of profession-wide personnel management, some confusion results from the non-standardized title structures used throughout the United States. This inability to equate local titles to standard sets has an impact on personnel data reporting for Department of Labor and Department of Justice career and management statistics.

MAP II-1

Distribution of Questionnaire Respondents

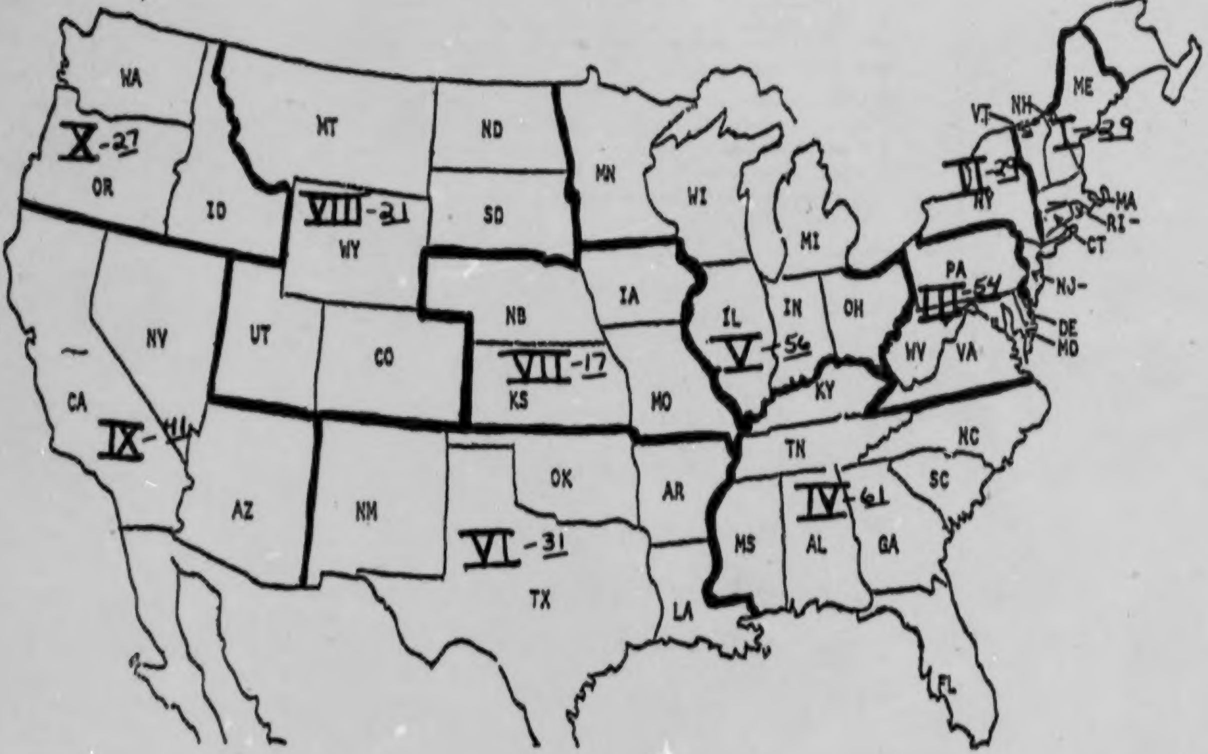

WA
X-27
OR
ID
MT
VIII-21
WY
ND
SD
MN
WI
MI
NY
VT
NH
ME
I-39
II-29
MA
RI-
CT
NJ-
PA
III-54
DE
MD
WV
VA
OH
IN
IL
V-56
IA
NB
VII-17
KS
MO
KY
TN
NC
SC
IV-61
GA
AL
MS
AR
LA
FL
OK
VI-31
TX
NM
AZ
CO
UT
NV
CA
IX-41

TABLE II-1

INDIVIDUAL CORONER/ME PROGRAM

CATEGORY	POPULATION SERVED									
	0-10,000	10,000-100,000	100,000-200,000	200,000-400,000	400,000-600,000	600,000-1,000,000	1,000,000-2,000,000	2,000,000-3,000,000	3,000,000-5,000,000	5,000,000-8,000,000
ME	1	60	22	36	17	29	8	5	7	11
CORONER	8	76	15	19	9	9	2	2	4	3

3. QUESTION:

Name and address of the office for which this work is done.

Name

Street

State **Zip**

Telephone

Response:

- See Map II-1 for geographical distribution of respondents.

- Table II-1 is a presentation of population served by Medical Examiner or Coroner offices.

4. QUESTION:

If you are a physician, are you:

☐ Board certified in Forensic Pathology
☐ Board eligible in Forensic Pathology
☐ Board certified in Anatomic Pathology
☐ Board eligible in Anatomic Pathology
☐ Board certified in Clinical Pathology
☐ Board eligible in Clinical Pathology
☐ Other (Specify) ______________________

Response:

- 92 - Board Certified in forensic pathology
  28 - Board Eligible in forensic pathology
  221 - Board Certified in anatomic pathology
  21 - Board Eligible in anatomic pathology
  147 - Board Certified in clinical pathology
  26 - Board Eligible in clinical pathology
  535
- Many individuals reported more than one qualification.

Finding:

- It would appear that the low ratio of the individual Board Certified or Board Eligible in Forensic Pathology (22%) may, in part, be due to the limited number of residencies available and the failure to fill even these.

5. QUESTION:

a. Do you participate in Forensic Science related to continuing education?

☐ Yes ☐ No

b. If "Yes", which of the following types of education/training have you participated in since January 1972?

☐ On-the-job Training

☐ Seminars (By whom and what subjects?) ______

(Indicate colleges/manufacturers/professional societies/ other operating agencies)

☐ Workshops (By whom and what subjects?) ______

☐ Professional Meetings (Which?) ______

☐ College Credit Courses (Title and College) ______

Response:

- 92% - Yes

  08% - No

- Of those who answered "Yes" the following results are presented:
  - Based on a subsequent oral survey, it was ascertained that in future years preference as to attendance at educational meetings will accrue to those programs that are accredited for recertification purposes.
  - See Table II-2, Continuing Education -- by job title.
  - 26% of the 314 respondents checked two types of education/ training programs

TABLE II-2

Continuing Education -- By Job Title

Title	Seminars By							Workshops By						Profession Meetings Of					
	CAP	AFIP	AAFS	IACME	ASCP	NAME	Others	ASCP	CAP	AAFS	IACME	AFIP	Others	AAFS	NAME	ASCP	CAP	IACME	Others
Medical Examiner	5	7	10	1	4	4	76	12	7	4	1	2	24	37	19	13	10	2	37
Autopsy Surgeon	6	3	1	0	1	0	2	2	1	0	0	0	1	3	1	0	0	0	0
Medical Investigator	0	1	4	0	2	2	2	1	0	1	0	0	3	4	1	0	0	0	2
Pathologist	13	5	6	0	10	1	27	10	6	2	0	0	15	16	5	11	8	2	11
Coroner	7	3	3	6	3	1	26	1	1	1	2	2	15	8	1	2	2	6	15

CAP - College of American Pathology
AFIP - Armed Forces Institute of Pathology
AAFS - American Academy of Forensic Sciences
IACME - Int'l Association of Coroners & Medical Examiners
ASCP - American Society of Clinical Pathology
NAME - Nat'l Assoc. of Medical Examiners
Other - Local & Regional Activities

- 15% - checked three
- 07% - checked four
- 03% - checked all

Finding:

- Contrary to the other forensic disciplines, the coroners and medical examiners are very educationally oriented. 51% participated in two or more of the cited programs.
- In the future, preferences in continuing education opportunities will accrue to those offerings that are accredited by the certifying board.

6. QUESTION:

> **If you are not a physician, please outline your educational background.**

Response:

- Of 22 non-physicians, the following education was indicated:

7	Mortuary School (of which 3 reported some college work)
3	Embalming School (of which 3 reported some college work)
6	Universities/colleges
1	Medical School
1	Law School
1	Business College

7. QUESTION:

If you are a physician, did you complete a formal residency in Forensic Pathology?

☐ **Yes** ☐ **No**

Response:

- 81 - Yes

  269 - No

- This further corroborates the finding in Question 4, above.

8. QUESTION:

Would you please provide an evaluation of your forensic education:

	Excellent	**Good**	**Average**	**Poor**
Formal education	☐	☐	☐	☐
On-job-training	☐	☐	☐	☐
Continuing education	☐	☐	☐	☐
Seminars/workshops	☐	☐	☐	☐

Response:

- Total Responses

	Excellent	Good	Average	Poor
Formal Education	62	59	63	46
On-job-training	124	109	50	17
Continuing-Education	57	115	78	30
Seminars/Workshops	69	103	61	40

- Responses limited to those who, in Question 7, indicated that they had completed a formal residency in Forensic Pathology:

	Excellent	Good	Average	Poor
Formal Education	44	25	10	1
On-job-training	52	15	6	1
Continuing-Education	19	24	22	2
Seminars/Workshops	17	17	19	5

Response Analysis:

- The response to "Formal education" is suspect since coroner/medical examiner personnel have received very little formal forensic education. In all likelihood, the low rating may reflect the absence of such educational opportunities.

Finding:

- Those with no formal forensic training rated their O-J-T much higher than other programs. Those with formal forensic training rated their O-J-T only slightly higher than other training. It may be difficult to distinguish formal training (residency) in Forensic Pathology from other O-J-T.

- Continuing-education and workshops were rated relatively lower by both groups.

9. QUESTION:

Please provide information regarding career experience in your forensic work.

Position description	Years	Reason for change

Response:

See Table II-3, Years of Experience in Current Position.

Finding:

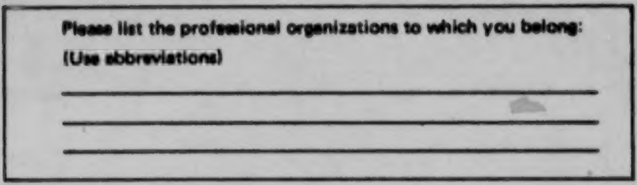
- Although the Coroners and Medical Examiners show a capability for longevity, the "Pathologist" has the most constant rate of entry and continuation in the profession.

TABLE II-3

INDIVIDUAL CORONER/ME PROGRAM

CURRENT POSITION	Years of Experience				
	1-3	4-6	7-10	11-15	16+
ME	22	15	9	9	16
ASST. ME	18	12	4	7	4
AUTOPSY SURGEON	3	2	2	1	2
MED. INVESTIGATOR	4	1	2	0	1
PATHOLOGIST FOR CORONER/ME	15	12	15	13	24
CORONER	8	8	5	5	11
ASST. (DEPUTY) CORONER	0	3	2	2	1
INVESTIGATOR	1	1	1	0	1

10. QUESTION:



Please list the professional organizations to which you belong:
(Use abbreviations)

____

____

____

Response:

- 119 different professional organizations were cited. Of these 119 -- 108 (90%) were cited less than six times and are not listed below.
- Following are the more frequently listed organizations.

Number of Respondents	Organization
118	American Society of Clinical Pathology
112	College of American Pathology
112	American Medical Association
76	American Academy of Forensic Sciences
41	National Association of Medical Examiners
24	International Association of Pathologists
10	American Association of Blood Banks

11. QUESTION:

> **Please list your publications (pertaining to *medicolegal* work) for 1972-74 that you consider significant. (Include title, journal, volume, date — attach separate sheet if necessary).**
>
> ______________________________
>
> ______________________________
>
> ______________________________
>
> ______________________________

Response:

- 55 individuals, or 13% of the total respondents, indicated that they had published significant medicolegal articles, etc., during the period 1972-1974.
- Approximately 50% had published more than one article.

Finding:

- The medicolegal community does not support its profession by writing.

12. QUESTION:

> **Please list any teaching positions for faculty appointments held by you which pertain to your medicolegal work.**
>
> ______________________________
>
> ______________________________
>
> ______________________________
>
> ______________________________

Response:

- 112 of the 356 respondents (33%) stated that they held a teaching position or faculty appointment relating to their medicolegal work.

TABLE II-4

INDIVIDUAL CORONER/ME PROGRAM

CATEGORY	NO.	ME	ASST. ME	AUTOPSY SURGEON	MED. INVESTIGATOR (PHYSICIAN)	PATHOLOGIST FOR CORONER/ME	CORONER (PHYSICIAN)	CORONER (NON-PHYSICIAN)	(ASST. (DEP.) CORONER	INVESTIGATOR NON-PHYSICIAN
Work done in Jurisdiction of:										
CORONER	153	0	0	10	4	62	40	14	10	3
ME	203	100	41	17	7	46	0	0	0	2
TOTAL	356	100	41	27	11	108	40	14	10	5

13. QUESTION:

The following information will help to establish geographical and statistical information.

a. Year of birth: ________

b. Sex: ______ Male ______ Female

Response:

- The average age of the respondents was 40 years of age, with a breakout as follows:

Age	Number
30-40	55
41-50	126
51-65	129
65+	32

- 334 - Male

  12 - Female

14. QUESTION:

Is your agency work done in the jurisdiction of a:

☐ Coroner ☐ Medical Examiner

Response:

- 153 - Coroner

  203 - Medical Examiner

- See Table II-4, distribution of respondents according to agency for whom they work.

15. QUESTION:

a. This work is done:

☐ as a salaried employee
☐ by contract
☐ fee for service
☐ Other (Specify) ______________________________

b. I am:

☐ Elected
☐ Appointed (Civil Service)
☐ Appointed (Non-Civil Service)

Response:

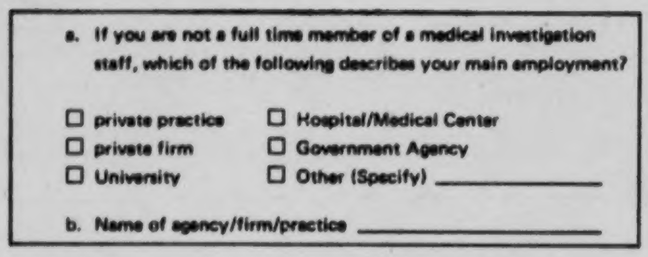
- a. 104 - Salaried
  32 - Contract
  207 - Fee
  12 - Other

- b. 22% - Elected
  13% - Civil Service
  65% - Non-Civil Service

Finding:

- The average medical examiner/coroner employee is a non-civil service employee paid on a fee-for-service basis whose main employment is in private practice or in a hospital/medical center.

16. QUESTION:



a. If you are not a full time member of a medical investigation staff, which of the following describes your main employment?

☐ private practice
☐ private firm
☐ University
☐ Hospital/Medical Center
☐ Government Agency
☐ Other (Specify) ______________

b. Name of agency/firm/practice ______________

Response:

- 281 respondents indicated that they are not full time members of a medical investigation staff.

- Main employment was as follows:

  49% - Private Practice

  05% - Private Firm

  09% - University

  31% - Hospital/Med. Cntr.

  05% - Government Agency

  01% - Other

17. QUESTION:

Have you handled any medicolegal cases in a geographic area or jurisdiction other than your primary place of practice?

☐ Yes ______________ ☐ No
(Number in 1973)

Response:

- 157 - Yes
  188 - No

- The distribution of the number of cases handled in another jurisdiction in 1973 is as follows:

Nr. of Cases	Number of Respondents
1-5	54
6-10	28
11-20	24
21-30	11
31-50	4
51-100	9
100+	5

18. QUESTION: **Where do you perform medicolegal post-mortem examinations? ______________**

Response:

- 151 - Hospitals
  97 - Funeral Homes
  49 - Coroner's Offices
  31 - Medical Examiner's Offices
  2 - Garages
  37 - Others

Finding:

- The hospital is the most common site at which medicolegal post-mortem examinations are conducted.

19. QUESTION: **What percentage of your total workload is comprised of medicolegal cases? __________%**

Response:

Percent of Workload in medicolegal cases	Number Respondents
0-05%	106
06-10%	50
11-20%	34
21-30%	26
31-50%	22
51-99%	30
100%	50

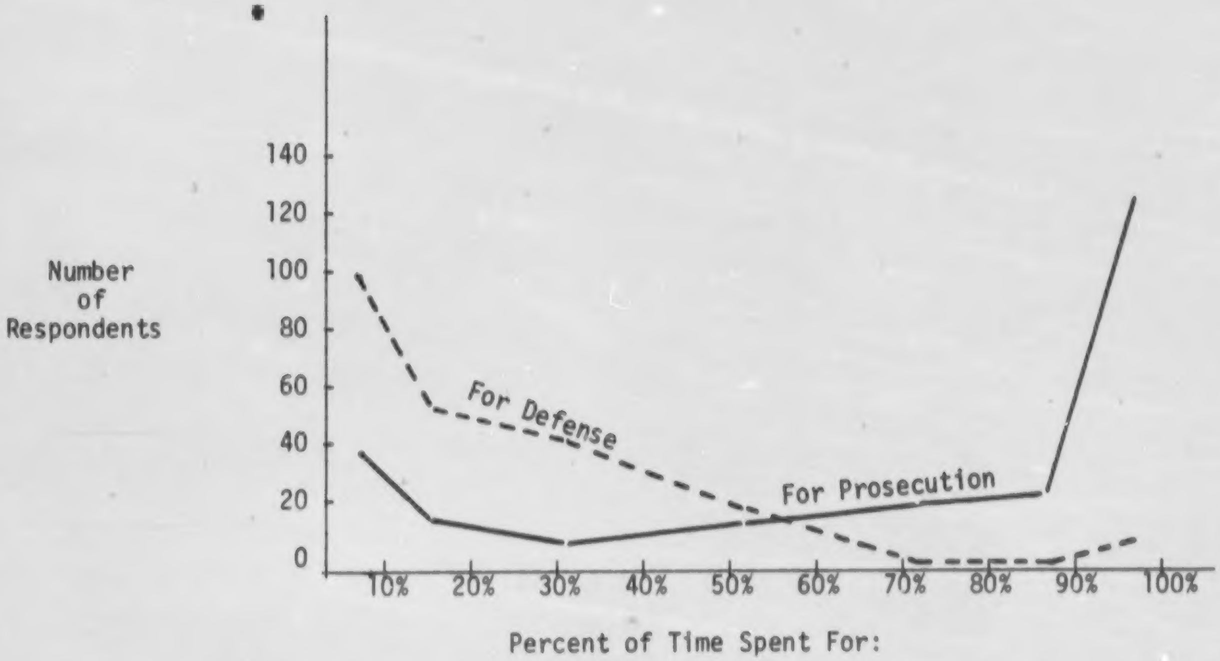
- The mean is 36%.

20. QUESTION:

Approximately ________ % of the time is for the prosecution.
________ % of the time for the defense.
____

Response:

Percent	For Prosecution	For Defense
0- 9%	37	93
10- 19%	16	53
20- 39%	8	40
40- 59%	17	19
60- 79%	20	2
80- 89%	22	2
90-100%	126	9



- The mean time spent on cases for the prosecution is approximately 76%.

- The mean time spent on cases for the defense is approximately 24%.

- For a breakout according to the position held, see Table II-5.

21. QUESTION:

Of your time spent in giving expert testimony, approximately what percentage is spent in civil proceedings? ________%

criminal proceedings? ________%

Response:

- Of their time spent giving expert testimony, 23% is devoted to civil proceedings and 77% to criminal proceedings.

Finding:

- The average coroner/medical examiner devotes three quarters of his expert testimony time to criminal cases.

TABLE 11-5 MEDICOLEGAL CASEWORK

Job Titles	% of Time for Prosecution									% of Time for Defense								
	-1	1-5	6-10	11-20	21-30	31-40	41-50	51-75	76-100	-1	1-5	6-10	11-20	21-30	31-40	41-50	51-75	76-100
Medical Examiner	2	7	1	1	1	0	5	5	51	4	28	11	12	5	0	5	0	0
Asst. Medical Examiner	2	0	3	1	0	0	0	4	16	1	2	0	1	2	0	0	0	1
Autopsy Surgeon	0	0	0	1	0	0	0	1	4	1	2	0	1	1	0	0	0	0
Medical Investigator	0	1	0	1	0	0	2	1	3	0	0	1	1	1	0	2	0	2
Coroner (Physician)	0	1	0	2	0	0	2	2	17	0	1	3	3	1	1	2	0	0
Coroner (Non Physician)	0	0	1	1	0	0	0	0	5	0	1	2	1	0	0	0	0	0
Asst. Coroner	0	1	0	0	0	0	0	2	3	0	4	1	0	2	0	0	0	0
Investigator	0	1	0	1	0	0	1	0	0	0	2	0	0	0	0	1	0	1
Pathologist for Coroner M/E	5	4	4	4	0	1	4	8	42	6	14	17	7	4	2	5	0	5

In the following questions (#22 through #30) assume that the medicolegal investigation of death is composed of 6 basic tasks.

1. Investigation
2. Decision making regarding the extent of examination necessary
3. Pathologic examination and ancillary studies
4. Certification of cause and manner of death
5. Subsequent expert testimony
6. Administrative decision making (See "Agency" Questionnaire)

22. QUESTION:

Approximately what percentage of your time is spent on:

______ **% Task 1** ______ **% Task 4**
______ **% Task 2** ______ **% Task 5**
______ **% Task 3** ______ **% Task 6**

1. **Investigation**
2. **Decision making regarding the extent of examination necessary**
3. **Pathologic examination and ancillary studies**
4. **Certification of cause and manner of death**
5. **Subsequent expert testimony**
6. **Administrative decision making (See "Agency" Questionnaire)**

Response:

FREQUENCY RESPONSE

Percent of Time Devoted	TASK					
	#1	#2	#3	#4	#5	#6
0 - 9%	121	160	41	169	151	140
10 - 19%	56	57	26	55	86	32
20 - 29%	27	27	11	20	26	13
30 - 39%	8	6	13	7	2	9
40 - 59%	23	6	58	5	2	6
60 - 69%	5	0	22	0	1	0
70 - 79%	12	2	33	4	0	2
80 - 89%	11	1	36	0	0	1
90 - 100%	6	9	33	10	6	4
Mean % of Time Devoted per Task	23	18	64	15	13	15

- Clearly, Task #3 occupies the largest proportion of the time spent on the six tasks. Task #1 represents the next greatest amount of time. Tasks #2, #4, #5, #6 consume approximately the same proportion of time.

TABLE II-6

Ratio of M.D.'s & Non M.D.'s Performing The Six Tasks

	Task 1	Task 2	Task 3	Task 4	Task 5	Task 6
MD	223	241	255	247	261	142
Non-MD	16	13	8	9	10	5

TABLE II-7

INDIVIDUAL CORONER/ME PROGRAM

Percent of time spent on TASK - 1						
	-5%	5-10%	11-30%	31-50%	51-75%	76-100%
MD	35	99	42	19	15	12

TABLE II-8

CORONER - MEDICAL EXAMINER
(Individual)

First		Second		Third	
M. D.		M. D.		Non-Pathologist	
No	Yes	Pathologist	Non Pathologist	O J T	No - O J T
8	255	214	41	17	24

Note: 8-Non M.D.'s with qualifications as follows:
1 3yrs college - 12 months mortuary school - No OJT
1 2yrs business college - OJT
1 Graduate school of mortuary science - No OJT
1 2yrs college - graduate mortuary college - No OJT
1 2yrs college - 1yr embalming school - No OJT
1 mortuary school - OJT
1 degree general science - OJT
1 criminal investigation - No OJT

Table II-6 shows the ratio of M.D.'s to non-M.D.'s who perform the six tasks.

Table II-7 shows the breakdown of time spent by M.D.'s on Task 1.

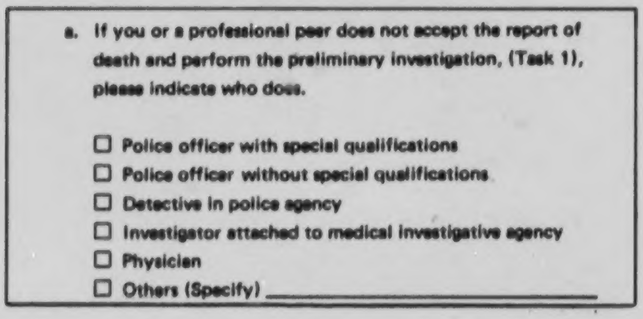
Table II-8 shows:

First: The number of M.D.'s who perform Task 3
Second: Of the M.D.'s -- those who are pathologists
Third: Of the Non-Pathologists -- those who indicated O-J-T pertaining to Task 3.

Finding:

- The greatest amount of coroner/medical examiner office time (64%) is devoted to pathological examinations and ancillary studies. Next is "Investigation" -- 23%, followed by decision making regarding the extent of examinations to be made.

23. QUESTION:



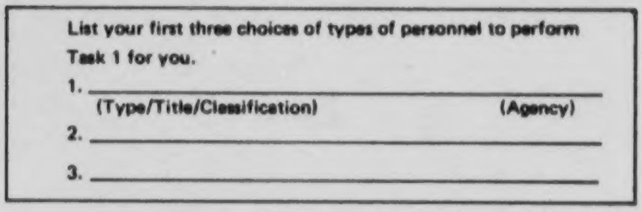
a. If you or a professional peer does not accept the report of death and perform the preliminary investigation, (Task 1), please indicate who does.

☐ Police officer with special qualifications
☐ Police officer without special qualifications
☐ Detective in police agency
☐ Investigator attached to medical investigative agency
☐ Physician
☐ Others (Specify) ____________________

Response:

- 26% - Police officer with special qualifications
  15% - Police officer without special qualifications
  19% - Detective in police agency
  25% - Investigator from medical investigative agency
  14% - Physician
  01% - Other

24. QUESTION:



List your first three choices of types of personnel to perform Task 1 for you.

1. ____________________

(Type/Title/Classification) (Agency)

2. ____________________

3. ____________________

Response:

- Following is the frequency distribution of 1st choices:

  112 - Investigator (Med. Unit)

  80 - Police

  57 - Physicians

  40 - Detectives

  24 - Coroner's Office

  2 - Attorneys

2nd choices:

  84 - Police

  56 - Detectives

  49 - Investigators (Med. Unit)

  25 - Physicians

  24 - Coroner's Office

  3 - Attorneys

3rd choices:

  61 - Police

  49 - Coroner's Office

  27 - Investigators (Med. Unit)

  26 - Detectives

  24 - Physicians

  4 - Attorneys

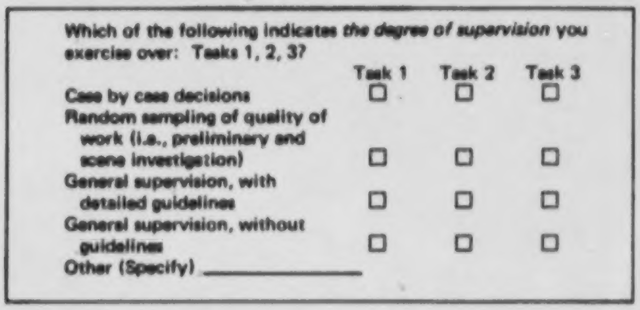
- The following is the distribution of 1st choice responses from physicians:

80 - Investigators
42 - "M.D.'s"
37 - Police Officers
25 - Detectives
38 - Others

Finding:

- If the Coroner or Medical Examiner (or a professional peer) cannot conduct the investigation of the case, a trained investigator (non-physician) from the coroners'/medical examiners' medical unit is preferred -- with a trained police officer ranked second.

25. QUESTIONS:



Which of the following indicates *the degree of supervision* you exercise over: Tasks 1, 2, 3?

	Task 1	**Task 2**	**Task 3**
Case by case decisions	☐	☐	☐
Random sampling of quality of work (i.e., preliminary and scene investigation)	☐	☐	☐
General supervision, with detailed guidelines	☐	☐	☐
General supervision, without guidelines	☐	☐	☐
Other (Specify) ______________			

Response:

Degree of Supervision	Task 1	Task 2	Task 3
Case by case decision	65%	80%	76%
Random sampling of quality	8%	7%	3%
General supervision (detailed guidelines)	17%	7%	10%
General supervision (no guidelines)	10%	6%	11%

26. QUESTION:

Following is a list of agencies who may perform Tasks 2 and 4.

a. In the first column, indicate the approximate percentage of those instances in which one or more of the listed agencies *makes the Task 2 decision.*

b. In the second column, indicate the approximate percentage of those instances in which one or more of the agencies makes the Task 4 certification of death.

Agency	% who perform Task 2	% who perform Task 4
Law enforcement agency	_____	_____
Health agency - environmental	_____	_____
Health agency - commun. disease	_____	_____
Health agency - occupational	_____	_____
Coroners office - non-phys. dir.	_____	_____
Coroners office - phys. dir.	_____	_____
Medical exmainers office	_____	_____
Prosecution or court ordered	_____	_____
Other (Specify) ________________		

c. In your estimation, who should complete the certification of death? (Task)

____

Response:

● Agency	a. Task 2	b. Task 4
Law enforcement agency	3%	1%
Health agency - environmental	0%	0%
Health agency - comm. disease	0%	0%
Health agency - occupational	0%	0%
Coroner's office - non-phys. dir.	2%	1%
Coroner's office - phys. dir.	18%	16%
ME office	34%	38%
Prosecution or court ordered	41%	42%
Other	2%	2%

- Responses to part "c", above:

  94 - Medical examiner or "M.E. Office"

  36 - Pathologist (of which 8 cited "forensic pathologist")

  33 - M.D. (of which 4 cited "forensic M.D.")

  ———

  163 - Total Physicians

  32 - Coroner or "Coroner's Office"

  6 - Other

Finding:

- Whereas the determination of the extent of examination (whether or not an autopsy should be conducted) and the certification of cause and manner of death are performed by non M.D.'s in 41% of the cases (versus 34% by Coroner/ Medical Examiner Office), the respondents overwhelmingly feel that these are tasks for a physician operating under the aegis of the coroner's/medical examiner's office.

27. QUESTION:

If your Task 2 services are under utilized, which of the following factors do you feel are responsible? (Check all appropriate)

☐ Lack of education/experience of individual responsible for this task of decision making
☐ Limitation of financial resources
☐ Limited availability of physical facilities to accomplish Task 3
☐ Limited availability of personnel resources to accomplish Task 3
☐ Physical distance (miles) between event and available personnel or facility (translated into increased costs for personnel or transportation)
☐ Ethnic or religious customs, mores and prejudices
☐ Other (Specify) ____________________

Response:

- 72 - Lack of education/experience of individuals responsible for the task.

93 - Limited finances

53 - Limited physical facilities for Task #3.

45 - Limited personnel to perform Task #3.

44 - Excessive distance/cost between event and available personnel.

18 - Ethnic/religious customs, mores, principles.

28. QUESTION:

If you or one of your professional peers does not perform those examinations or ancillary studies of a Forensic Pathologist (Task 3) indicate who does. (Check all appropriate)

- ☐ **General Pathologist**
- ☐ **Resident in Forensic Pathology training program**
- ☐ **Resident in regular anatomic training program**
- ☐ **Technician, trained on-the-job**
- ☐ **Technician, graduate of paramedical training program**
- ☐ **Other (Specify) __________________________**

Response:

- 141 - General pathologist
  19 - Resident in forensic pathology
  18 - Resident in regular anatomic program
  9 - Technician, trained on the job
  8 - Technician, graduate of a paramedical training program

29. QUESTION:

Are there restrictions on these Task 3 ancillary decisions?
☐ **Yes** ☐ **No**

Response:

- 30% - Yes
  70% - No

30. QUESTION:

If "Yes", to Question 29, what are these restrictions? (Check all applicable)

☐ Limitation of financial resources
☐ Lack of education/experience on the part of the individual responsible for making these decisions
☐ Limited availability of physical facilities
☐ Physical distance (miles) between the event and available personnel or facility (translated into increased cost for personnel or transportation
☐ Ethnic or religious customs, mores, or prejudices
☐ Other (Specify) ______________________

Response:

- Of those who answered "yes" to question 29, above, the following restrictions were cited:

66 - Financial limitations
25 - Lack of education/experience on the part of the responsible individual
37 - Physical facilities limitations
31 - Distance between event and facility
7 - Ethnic or religious custom

31. QUESTION:

Do your Coroner or Medical Examiner duties include administrative decision making?
☐ Yes ☐ No

Response:

- 39% - Yes
  61% - No

. 32. QUESTION:

> **Please indicate briefly what you believe should be the minimum standards for education, training and experience for individuals in your forensic specialty.**

Response:

- Board Certification

  56-Anatomic Pathology
  22-Forensic Pathology
  10-Clinical Pathology

- Good Foundation In:

  14-Forensic Pathology
  6-General Pathology
  5-Anatomic Pathology
  1-Clinical Pathology

- Residency

  12-Pathology
  5-Forensic Pathology
  3-Anatomic Pathology

- Years O-J-T

  28-One year
  2-Two years
  4-Three to Five years

	Years Experience			
	1	2	3	4
Forensic Path.	13	9	0	2
Anatomic Path.	8	9	5	1
Clinical Path.	3	4	0	1
General Path.	0	0	1	1
All Residencies	13	9	1	2

Finding:

- The minimum education and training requirements for medico-legal professionals favored by the respondents included: Board Certification in Anatomic Pathology; and either a residency program of one year or one year of O-J-T in Forensic Pathology.

- Less than half of the respondents favored a requirement for certification in Forensic Pathology.

- The unanimous opinion was that there should be one additional year of training either in a Forensic Pathology residency or in an O-J-T program. (Again, there may be confusion and commingling of those who considered formal residency in Forensic Pathology as O-J-T.)

33. QUESTION: What can be done to raise the level of understanding and acceptance of your forensic duties

Response:

- 102 - Education and Training Courses (for medical examiners/coroners; lawyers; agencies with whom medical examiners/coroners work)

  61 - Seminars/workshops (for medical examiners/coroners; lawyers; agencies)

  60 - Better Communications (Intra-profession; inter-professional; justice system; public)

Findings:

- Workshops and Seminars are needed for the consumers of medical examiner/coroner services.
- An organized system of timely communications is needed for the exchange of medicolegal professional news within the profession, with other disciplines in the forensic sciences, and with the lawyers and judges who must keep abreast of the state-of-the -art.

34. QUESTION: In your immediate geographic area are the total number of individuals in your forensic profession adequate to handle the current case load?

☐ Yes ☐ No

Response:

- 236 - Yes

  104 - No

35. QUESTION: Are the facilities where you perform post mortem examinations adequate?

Yes No

Response:

- 136 - Yes

  178 - No

Finding:

- The extensive use of hospital facilities for post mortem examinations is not satisfactory to the average coroner and medical examiner.

36. QUESTION:

> What additional facilities would you like to have (for medicolegal work)?
>
> ______________________________
>
> ______________________________
>
> ______________________________
>
> ______________________________

Response:

- 243 recommendations were made.
- See Table II-9 for a tabulation of specific recommendations.

TABLE II-9

INDIVIDUAL CORONER/ME PROGRAM

RECOMMENDED IMPROVEMENTS

FACILITIES, SERVICES AND SYSTEMS

[71 Medical Examiners, 70 Pathologists for Coroners/Medical Examiners, 38 Coroners, 5 Autopsy Surgeons, and 5 Investigators contributed to the following list.]

48 - Photographic facilities/capability

41 - More space

41 - Laboratory (19-toxicology, 17-forensic or police, 2-state, 2-ME)

38 - Morgue facilities or improvements

37 - X-Ray improvements or capability

17 - Lighting, refrigeration, storage, ventilation, helicopter, dictating/recording, tables.

15 - Personnel (assistants, staff, clerical, investigators, histologist, serologits, ballistics, microbiologist)

4 - Reorganization (2-state system, 1-county system, 1-military M.E. system)

1 - State institute of forensic science

1 - Medical examiner lay-investigator system

37. QUESTION:

What can be done to improve the quality of work done by others in the medicolegal field?

Response:

- A total of 471 improvement ideas were offered in the following general areas:

  130 - Education [More forensic science courses in curricula; more continuing education opportunities; better education for the police, prosecution/defense, courts, and elected officials of municipal and state governments.]

  86 - Training [Regional training facilities; residency training programs; intra-discipline training; more and better formalized training programs.]

  82 - Seminars [Mandatory attendance; regional, state, and local sessions; multi-specialty and interdisciplinary seminars, more frequent sessions.]

  173 - Miscellaneous [More funds; better laws; communications; research; counseling; standards; publicity.]

38. QUESTION: In what areas of medicolegal investigation is research needed?

Response:

- Of 308 recommendations the following were major areas of concern:

  97 - Toxicology related areas [procedures; standards; instrumentation; drugs and alcohol; poisoning.]
  48 - Time of Death
  21 - Sudden Infant Death Syndrome
  18 - Sudden Death [adult, infant]
  13 - Drowning
  10 - Suicide
  7 - Environmental Pathology

39. QUESTION:

a. Are your meetings with counsel adequate to prepare you for court presentations? ☐ Yes ☐ No

b. If "No", how may this be improved? ____________________

Response:

- 61% - Yes

  39% - No

- Of the 124 responses to "No" the following are the more common recommendations:

  71 - More pre-trial meetings with counsel.

  20 - Counsel better trained in profession and in forensic pathology.

  9 - Attorney should be provided more time to prepare case.

  8 - Attorneys should be more motivated/more interested.

  8 - Better communications between attorney /expert witness.

40. QUESTION:

Do you feel you can adequately convey your evidence to the court and/or jury? ☐ Yes ☐ No

If "No", how might this be corrected? ____________

Response:

- 92% - Yes
  8% - No

41. QUESTION:

Why do you engage in Forensic Pathology?

☐ Prestige
☐ Remuneration
☐ Only one available
☐ Community service
☐ Part of training
☐ Other (Specify) ____________

Response:

- 26 - Prestige
  51 - Remuneration
  72 - Only one available
  204 - Community service
  28 - Part of training

CHAPTER III

CORONER/MEDICAL EXAMINER OFFICES

DEFINITION

A Coroner and Medical Examiner's Office is a public office concerned with the investigation and interpretation of injury and death resulting from violence or occurring suddenly, unexpectedly, or in an unexplained manner.

Coroners' Offices may be headed by either a physician or a non-physician, depending on the applicable law of that jurisdiction. The head of a Medical Examiner's Office must be a physician.

Most Coroners are elected; most Medical Examiners are appointed.

SURVEY BACKGROUND

The material summarized in this chapter is the product of a survey taken in 1974-1975. The questionnaire was mailed to all individuals who indicated in the "Individual" Questionnaire that they were heads of coroner or medical examiner offices, plus those so listed in the rosters of the American Academy of Forensic Sciences, International Association of Coroners and Medical Examiners, plus the National Association of Medical Examiners.

Responses are as follows:

Questionnaires Mailed	Responses	% Response
187	56	30%

FINDINGS

- Relatively few coroners/medical examiners are involved in budget activity related to capital funds.

- The major source of funding for C/M.E. offices is the county -- with funds (even for research) coming from the federal government.

- On an average, heads of medical examiner offices are paid twice as much as heads of coroner offices.

- Coroner/Medical Examiner agencies have experienced only a small personnel growth program over the past four years and do not contemplate a significant personnel growth rate during the next three year period.

- There is very little meaningful and compatible data available on a national basis concerning coroner and medical examiners office personnel management.

- The per capita expenditure for medicolegal services in the largest "Population Served" areas (2 million to 5+ million population) is 43% lower than the rate for agencies serving 1 million to 2 million people.

- Of those jurisdictions that experience an estimated death rate of from 1 to 2,500 persons per year, the concerned coroner/ medical examiner agencies actually accept an average of 18% of the cases and conduct actual autopsies on an average of 57% of the actual cases accepted.

- Of those jurisdictions that experience an estimated death rate of from 2,501 to 20,000+ persons per year, the concerned coroner/medical examiner agencies actually accept an average of 24% of the cases and conduct actual autopsies on an average of 38% of the actual cases accepted.

- The national average of reported coroner/medical examiner agency cost per case accepted is $153.

- Although most medicolegal agencies engage in some form of continuing education, very little of it is formally structured and accredited for certification/recertification purposes.

- There is little evidence of nationally structured, meaningful, planned education for the agencies that support medicolegal services or for the consumers of such service.

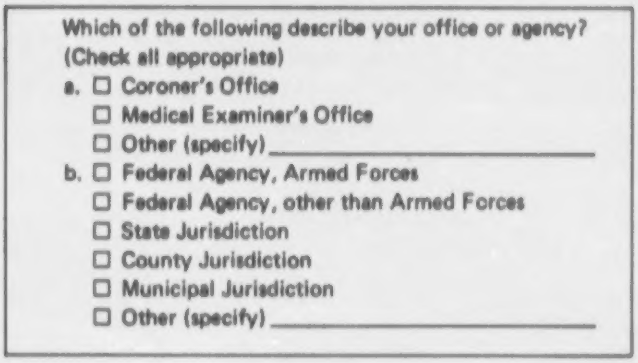
- Improvement of facilities rank as the highest priority with agency directors -- with personnel matters ranked a close second.

- Highest priority for research was assigned to "Sudden Infant Death" and "Time of Death or Injury."

- The most common problem areas for medicolegal agency directors are: inadequate budgets; untrained agency personnel; untrained support personnel; untrained lawyers; jurisdictional disputes; lack of public awareness.

SURVEY RESULTS

1. QUESTION:



Which of the following describe your office or agency?
(Check all appropriate)
a. ☐ Coroner's Office
☐ Medical Examiner's Office
☐ Other (specify) ____________________
b. ☐ Federal Agency, Armed Forces
☐ Federal Agency, other than Armed Forces
☐ State Jurisdiction
☐ County Jurisdiction
☐ Municipal Jurisdiction
☐ Other (specify) ____________________

Response:

- 24 - Coroner's Office

  32 - Medical Examiner's Office

  2 - Other

- The distribution of offices by jurisdiction is as follows:

Office	State	County	Municipal
Coroner's Office	0	23	1
Medical Examiner's Office	16	15	1

2. QUESTION:

Are you a statutory affiliate or an official part of:
(Check all appropriate)
☐ A University (Name) ____________
☐ A Health Agency
☐ A Law Enforcement Agency (Name) ________
☐ A Justice Dept. Agency (Name) ________

Response:

- 3 - University
  15 - Health Agency
  11 - Law Enforcement Agency
  1 - Justice Dept.

3. QUESTION:

Is the office part of a branch or satellite system?
☐ Yes ☐ No

Response:

- 20% of the offices were part of satellite systems.

4. QUESTION:

Does the head of the agency perform any of the following administrative/managerial duties — for the various budgets indicated? (Check all appropriate)

	Personnel Budgets/ Ceilings	**Operating Budgets**	**For Capital Funds**
Design & Plan Budgets	☐	☐	☐
Submit & Defend Budgets	☐	☐	☐
Receive Allocations	☐	☐	☐
Responsible for Expend.	☐	☐	☐

Response:

- Agency heads had budget duties as follows:

	Personnel	Operating	Capital Funds
Plan	30	37	23
Submit/defend	30	34	22
Receive allocations	23	29	16
Expenditure Responsibility	28	34	19

Finding:

- The greatest budgetary involvement by coroners and medical examiners is with the operating budget while the least involvement is with capital funds.
- The respondents are about equally involved in budget planning, submission/defense, and expenditures. Fewer are responsible for receipt of allocations.

5. QUESTION:

a. Does the head of the agency have decision making or advisory responsibility over the following? (Check all appropriate)

	Decision Making or Responsibility	Advisory Responsibility
Organization Policy	☐	☐
Fiscal Review	☐	☐
Personnel Management	☐	☐
Research Assignments	☐	☐
Teaching Authorization	☐	☐

Response:

- The agency heads had decision making and advisory responsibilities in these categories:

	Decision	Advise
Organization policy	39	11
Fiscal review	31	15
Personnel management	38	9
Research Assignments	25	4
Teaching authorization	26	6

6. QUESTION:

If you are supported in your administrative responsibilities by personnel or organizations outside your immediate organization, please indicate which. (Check all appropriate.)

☐ Commission or Board ☐ Political Body
☐ Citizen Group ☐ Other related admin. heads
☐ Hierarchial (Specify) ____________

Response:

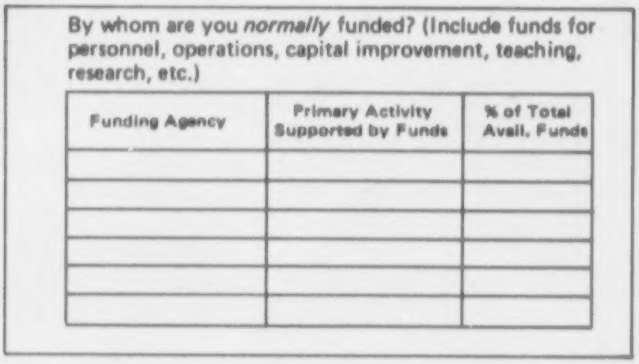
- Administrative support comes from:

Commission or board	15
Citizen group	0
Hierarchical	2
Political body	4
Related heads	7

Finding:

- Approximately 26% of the agencies are supported in their administrative responsibilities by commissions or boards.

7. QUESTION:



By whom are you *normally* funded? (Include funds for personnel, operations, capital improvement, teaching, research, etc.)

Funding Agency	Primary Activity Supported by Funds	% of Total Avail. Funds

Response:

- 70% were funded by counties.

Finding:

- The major source of funding for respondent agencies is the county.

8. QUESTION:

Please complete the following manning table. List agency head, deputy or assistant, Forensic Pathologists, Pathologists, Autopsy Surgeons, Toxicologists, Investigators, Morgue attendants, etc.)

Professional and Paraprofessional Position Title	Strength		Salary Range	
	Auth.	Actual	Min. $	Max. $

Response:

- The mean professional manning per agency was 10 with 50% reporting five or fewer personnel.

- Table III-1 shows the frequency distribution of salary ranges for the two top positions in the medical examiner's office and in the coroner's office.

Finding:

- The medical examiner program has a higher salary average for its heads than does the coroner program.

TABLE III-1

SALARY
(Annual)

	MINIMUM										MAXIMUM								
	In Thousands of Dollars										In Thousands of Dollars								
	-5K	6-10	11-15	16-25	26-30	31-35	36-40	40K+			-5K	6-10	11-15	16-25	26-30	31-35	36-40	40K+	Mean
Pathologist/ME																			
Director (Chief)				2	4	3	4	7						2	1	4	4	9	$36,900
Deputy (2nd in command)		2		4	2	2	4	1				1	1	3	1	4	3	2	24,300
Coroner																			
Coroner	2	2	3	2		1	1				1	1	3	5		1		1	$18,200
Deputy	2	2	1	1							1	2	3	2					11,100
Toxicologist																			
Chief		1	6	2	2								2	6	3				$18,700
Deputy				1	1									1	1				24,000

9. QUESTION:

> What is the total authorized strength of your agency? (Include professional, administrative, maintenance, and other non-professional support personnel)
>
> ____

Response:

- Strengths cited were as follows:

One person (the coroner)	-	4
2- 5 persons	-	22
6- 10 persons	-	10
11- 15 persons	-	4
16- 20 persons	-	3
26- 50 persons	-	6
51- 75 persons	-	2
76-100 persons	-	1
Over 100 persons	-	1

- Average manning including professional and non-professional employees was 12.

10. QUESTION:

> If any vacancies now exist in your agency in any of the professional, salaried positions please indicate how many are the result of *newly authorized positions.*

Position	Number

Response:

- A total of five agencies reported vacancies resulting from newly authorized positions.

11. QUESTION:

How many newly authorized professional positions have been created in your organization in the past three years? How many do you realistically anticipate creating in the next three years?

Newly Authorized Position Titles	Actual				Anticipated		
	'71	'72	'73	'74	'75	'76	'77

Response:

- Only 22 agencies reported having created new positions in 1973.

-

Newly Authorized Positions	Actual				Anticipated		
	71	72	73	74	75	76	77
Medical Examiner	1	0	1	1	0	0	0
Deputy Med. Exam.	1	5	1	5	3	0	1
Pathologists	1	3	6	6	0	2	0
Deputy Coroners	0	2	2	2	1	0	0
Pathologists-Resident	1	1	3	0	0	0	0
Toxicologists	3	4	5	1	4	2	2
Serologists	1	0	1	1	2	2	2
Investigators	5	6	8	7	13	6	5
Photographers	0	0	0	1	0	0	0

Response Analysis:

- Approximately 60% of the agencies reported no increase in staff, accomplished or planned over the seven-year period.
- Most of the increases cited in the Table came from three new agencies.

Finding:

- Coroner/Medical Examiner Agencies have not experienced a growth program over the past four years and contemplate no significant growth during the next three years.

12. QUESTION:

> On the annual basis, what is the average number of professional positions vacated in your agency because of transfers, resignations, dismissals, and deaths? (Do not include those created because of newly authorized positions.) (Circle one)
>
> 1 2 3 4 5 6 7 8 9 10 More

Response:

- Approximately 60% of the agencies reported that the average number of professional vacancies, for any cause, was less than one position per year.

Finding:

- Coroner/Medical Examiner agencies experience a remarkably stable employee force.

13. QUESTION:

a. Do you employ any of the following as consultants?

☐ Anthropologists	☐ Microbiologists
☐ Odontologists	☐ Entomologists
☐ Clinical Pathologists	☐ Radiologists
☐ Engineers	☐ Pharmacologists
☐ Psychiatrists	☐ Other (specify)________

b. If so, on what basis?
☐ Fee-For-Service
☐ Retainer (Contract)
☐ Voluntary (No Remuneration)

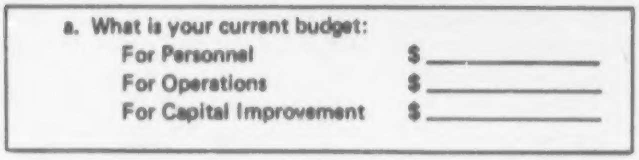
Response:

- a. Agencies employed consultants in the following areas:

Anthropologists	21
Odontologists	22
Clinical Pathologists	36
Engineers	7
Psychiatrists	9
Microbiologists	15
Entomologists	6
Radiologists	36
Pharmacologists	6

- b. Over 90% of the agencies reported that their consultants are paid on the basis of "Fee-For-Service". Approximately 10% of the above also indicated "Voluntary" (No remuneration).

14. QUESTION:



a. What is your current budget:
For Personnel $ ______
For Operations $ ______
For Capital Improvement $ ______

Response:

- The average total budget was about $200,000.

No answer	-	13
under 5,000	-	2
5 - 25,000	-	8
25 - 50,000	-	4
50 - 75,000	-	3
75 - 100,000	-	1
100 - 125,000	-	2
125 - 150,000	-	2
150 - 300,000	-	9
300 - 400,000	-	4
400 - 500,000	-	2
500 - 600,000	-	3
Over 600,000 (one 990,000)	-	2

- Insufficient data was provided for detailed budget studies.
- See Question 16 and 17 for additional treatment of budgeting data.

Finding:

- Very little personnel management and related budget data is readily available for needed statistical studies of the profession.

15. QUESTION:

a. What is the *minimum* age and qualification for retirement from your agency?

Minimum Age: ____________

Minimum Years of Service: ____________

b. At what age is retirement mandatory?

Maximum Age: ____________

Response:

- a. The mean retirement age was 55 with 20 years service.
- b. Mandatory retirement was usually cited at age 65.

Total Budget → Population Served	$Under 5,000	$5 - 25,000	$26 - 75,000	$76 - 150,000	$151 - 300,000	$301 - 400,000	$401 - 600,000	$600,000 - 1 Million	$1 Mil.+
1. Under 100,000	1	4							
2. 100,000 - 200,000	1	2	2						
3. 200,000 - 400,000			4	3					
4. 400,000 - 1 Million				1	2	1			
5. 1,000,001 - 2,000,000					1	2	1	3	
6. 2,000,000 - 5,000,000+					1	1	1	2	2

TABLE III-2

Population Served in Relationship to Total Estimated Budget

Per Capita Cost Population Served	<10¢	10-20¢	21-30¢	31-50¢	50¢+	Mean
1. Under 100,000	2	2	1			15¢
2. 100,000 - 200,000	2			3	1	32.5¢
3. 200,001 - 400,000		4		3		25.7¢
4. 400,001 - 1 Mil.			2	1	1	36.3¢
5. 1 Mil. - 2 Mil.			1	4	1	40¢
6. 2 - 5 Mil+	2	1	1	2		23¢

TABLE III-3

Population Served in relationship to Per Capita Expenditure

16. QUESTION:

What is the *approximate population* served by your organization? ________________ (Population)

Response:

- Approximate population served by agencies was as follows:

Nr. of Responses	Population
5	10 - 30,000
4	30 - 50,000
3	50 - 100,000
4	100 - 150,000
3	150 - 200,000
10	200 - 300,000
3	300 - 400,000
4	400 - 500,000
3	500 - 1,000,000
10	1 - 2 million
2	2 - 3 million
3	4 million

- See Table III-2 for Population Served in relationship to Total Estimated Budget
- See Table III-3 for Population Served in relationship to Per Capita Expenditure

Finding:

- The agencies serving the largest population (2 million to 5+ million) have a per capita expenditure for medical examiner/coroner services that is 43% lower than the rate for agencies serving 1 million to 2 million populations.

17. QUESTION:

Please estimate the following case load data for your agency.

	1972	1973	Est. 1974
a. Total Cases Referred to Your Agency			
b. Total Cases Accepted by Your Agency			
c. Total Autopsies Conducted			

Response:

- The distribution of case loads by percent of respondents was:

Case load	Referred	Accepted	Autopsies
Under 50	6%	3%	23%
50 to 100	3%	3%	13%
100 to 500	31%	34%	35%
500 to 1000	11%	9%	10%
1000 to 5000	31%	41%	20%
Over 5000	17%	9%	0%

- Table III-4 is a frequency distribution of agency case loads for 1973 based on estimated death rate per agency population served (1% ±.1% of population served)

- Table III-5 is a frequency distribution of the cost per case accepted according to the size population served.

Finding:

- Of those jurisdictions that experience an estimated death rate of from 1 to 2,500 persons per year, the concerned coroner/medical examiner agencies actually accept an average of 18% of the cases and conduct actual autopsies on an average of 57% of the actual cases accepted.

- Of those jurisdictions that experience an estimated death rate of from 2,501 to 20,000+ persons per year, the concerned coroner/medical examiner agencies actually accept an average of 24% of the cases and conduct actual autopsies on an average of 38% of the actual cases accepted.

- The national average of reported coroner/medical examiner agency cost per case accepted is $153.

	% Cases Accepted*				% Autopsies Conducted**				
Estimated Death Rate	0-25	26-50	51-75	Mean	0-25	26-50	51-75	76-100	Mean
1 - 500	2	1	-	20%	-	1	1	1	61%
501 - 1000	3	-	-	13%	1	2	-	-	50%
1001 - 2500	4	1	-	21%	2	1		2	60%
2501 - 5000	6	2	1	26%	4	3	2	-	35%
5001 - 10,000	3	1	-	18%	1	3	-	-	35%
10,001 - 20,000	4	3	-	27%	2	3	1	1	46%
20,000+	4	-	-	23%	1	3	-	-	37%

TABLE III-4

Agency Caseload for 1973 based on Estimated Death Rate

* % Cases accepted is based on actual cases accepted per estimated death rate.
** Autopsies conducted is based on actual autopsies per actual case accepted.

Cost Per Case Accepted*

Population Served	0-$50	$50-$100	$100-$150	$150-$250	$250-$350	$350-$450	$450+	Mean
1. 100,000	1	2	1					$75
2. 100,000 - 200,000	1	2	1					$75
3. 200,001 - 400,000	1	2	2	2				$118
4. 400,001 - 1 Mil			1	1	2			$231
5. 1 Mil - 2 Mil		1	1	3	1	1		$214
6. 2 Mil - 5 Mil+		1	2	2			1	$204**

TABLE III-5

COST PER CASE ACCEPTED

* Cost is The Reported Total Budget
** If the one outlier at $450 is eliminated the mean is $145

18. QUESTION:

a. Do you have a continuing education program?
☐ Yes ☐ No

b. If "Yes", please answer the following. (Check all appropriate)
- ☐ *On-The-Job Training*
  - ☐ Informal
  - ☐ Formal (Lesson outlines and reading assignments)
- ☐ *Seminars*
  - ☐ By Educational Institutions (Name) ____________
  - ☐ By your staff
  - ☐ By Equipment Manufacturers (Name) ____________
  - ☐ By Professional Societies (Name) ____________
- ☐ *Workshops*
  - ☐ By Education Institutions (Name) ____________
  - ☐ By Your Staff
  - ☐ By Equipment Manufacturers (Name) ____________
  - ☐ By Professional Societies (Name) ____________
- ☐ *Professional Meetings* (Your agency serves as host or sponsor)
- ☐ Other (Specify) ____________

c. If any of the above continuing education courses are accredited by an educational institute or society, please indicate.

Course	*Accrediting Organization*

Response:

- a. 64% - Yes

  36% - No

- b. 100% - O-J-T

  (41) Informal Programs

  (5) Formal Programs

  (10) Both

  71% - Seminars

  (10) By Educational Institutions

  (19) By Staff

  (9) By Professional Societies

42% - Workshops

(7) By Educational Institutions

(10) By Staff

(2) By Professional Societies

- c. 11 agencies indicated that their continuing education courses are accredited. Subjects were:

  Forensic Pathology
  Medicolegal Workshops
  Advanced Coroner Investigations
  Investigation of Death
  Criminalistics
  Legal Medicine
  Toxicology
  International Coroner and Medical Examiner Training Seminars

- d. One accreditation program was directly tied to a professional certification organization.

Finding:

- Although two thirds of the medicolegal agencies engage in continuing education programs, very little of such activity is formal and practically none of it is accredited for certification purposes.

19. QUESTION:

a. Do you provide an educational allowance for personnel taking courses outside of your agency?

☐ Yes ☐ No

b. If "Yes", is this allowance in the form of: (Check all appropriate)

☐ Tuition Support
☐ Text Book Support
☐ Time Off
☐ Other (Specify) ____________

Response:

- a. 27 - Yes
  29 - No

- b. Of those who answered "Yes", the following forms of allowances were indicated:
  17 - Tuition Support
  8 - Textbook support
  17 - Time off

20. QUESTION:

Please complete the following expert testimony table.

Categories	*No. of Times Expert Testimony Required* 1972	 1973	 1974 (Est.)
Criminal Litigation - Case Related	____	____	____
Civil Litigation - Case Related (Non-Industrial)	____	____	____
Civil Ligigation - Case Related (Industrial)	____	____	____
Non-Case Related Testimony	____	____	____

Response:

- See Table III-6 for distribution of No. of Times Expert Testimony Required in 1973.

- The mean occurrences per agency are in the following table:

Criminal litigation	18
Civil litigation/non-industrial	8
Civil litigation/industrial	4
Non-case related	4

- The frequency of occurrence was steady over time.

Finding:

- Over half of the expert testimony rendered by medical examiners and coroners pertains to criminal litigation.

TABLE III-6

FREQUENCY OF EXPERT TESTIMONY

	NO. OF TIMES EXPERT TESTIMONY REQUIRED IN 1973									
Category (Expert Test.)	1-3	4-6	7-10	11-15	16-20	21-25	26-30	31-50	51-100	101+
Criminal Litigation (case related)	8	5	5	1	2	3	3	5	5	2
Civil Litigation (case related non-indust.)	7	5	4	3	1	-	1	-	-	1
Civil Litigation (case related indust.)	8	4	5	-	1	-	1	-	-	-
Non-Case Related	5	3	3	-	1	-	-	-	-	-

21. QUESTION:

Is the data which is assembled by your agency available for use by outside qualified individuals?

☐ Yes ☐ No

If "Yes", in which of the following ways is it filed? (Check all appropriate)

☐ Case by Case
☐ Compiled by Categories
☐ Other (Specify) ________________

Response:

- Ninety-five (95%) per cent of the agencies make their data available to qualified non-agency personnel.
- The data is most often filed on a case-by-case basis.

22. QUESTION:

If your agency conducts research, please indicate the types of projects.

Past Projects: ________________

____

Current Projects: ________________

____

Response:

- 36 responses were given.
- Common projects in research cited were:
  - 5 - Sudden Infant Death
  - 4 - Auto Safety/Accidents
  - 4 - Drug Abuse
  - 3 - Drowning

23. QUESTION:

a. Do you provide education and training for individuals and agencies other than your own?
☐ Yes ☐ No

b. If "Yes", please indicate the type of subjects and the participants.

____

Response:

- 33 - Yes

  21 - No

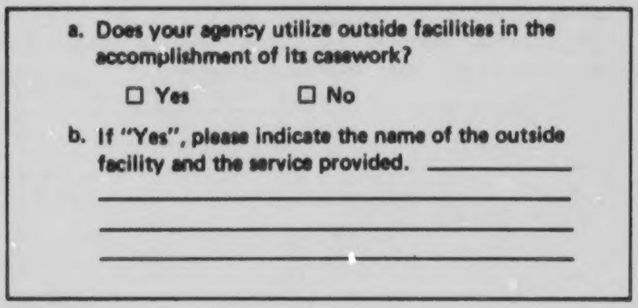
- Of those who answered "Yes", the following added information was given:

	Courses	Participants
7	"Law Enforcement"	Law Enforcement Personnel,
	"Crime Scene Invest."	Fire Marshals,
	"Duties of Coroner"	Law Students,
14	"Forensic Pathology"	Law Students,
	"Autopsies"	Medical Students,
	"Medical Aspects of Homicide"	Lawyers,
		Physicians,
		Nurses,
		Funeral Directors.

Finding:

- Further query reveals that despite the effort noted here, there are few meaningful medicolegal education and training opportunities for intraprofessional needs, for interdiscipline cross fertilization, and for consumer (lawyers, judges) orientation.

24. QUESTION:



a. Does your agency utilize outside facilities in the accomplishment of its casework?

☐ Yes ☐ No

b. If "Yes", please indicate the name of the outside facility and the service provided. __________

Response:

- a. 78% of the agencies utilize outside facilities to accomplish their work objectives.

  b. Of those answering "Yes" the following facilities and services were cited:

Facilities

9 - State Crime Labs

9 - Hospital Labs

5 - State Toxicological Labs

4 - City Crime Labs

3 - FBI Lab

22 - Others

Services (most common)

Toxicological
Police Technicians
X-ray Service
Microbiology
Trace Evidence
Statistical Data
Tissue Slides
Blood Samples
Serology

25. QUESTION:

If your agency performs work for other agencies, please indicate the areas or types of cases involved.

Response:

- Most common services provided other agencies were:

  5 - Autopsies

  3 - Toxicology services

26. QUESTION: **If funds were available, what would be your priority for improvement of your agency? (Use "1" for the highest priority, "2" for the next highest)**

________ **Facility (Specify Specific Improvement)** ________________________________

________ **Equipment (Specify Specific Item)** ________________________________

________ **Personnel (Specify)** ________________________________

Response:

- 17 agencies rated "facilities" as their 1st priority for improvement. 6 additional agencies gave "facilities" a 2nd priority. 4 gave it a 3rd priority. Common improvements included:

  "Laboratory"
  "Morgue"
  Increased Space
  Consolidate

- 6 agencies rated "equipment" as their 1st priority, 13 rated it as the 2nd priority, and 7 ranked it 3rd. Common improvements included:

  "Lab. Equipment"
  "Morgue Equipment"
  G.C. - Systems
  S.E.M.
  Portable Equipment
  Increase Transport
  Mass Spectograph
  Atomic Absorption Spectroscopy
  Gas Chromatography
  X-Ray Equipment
  Photographic Equipment
  Toxicology Equipment
  Radiology

- 17 agencies rated "personnel" as their 1st priority, 6 rated it 2nd and 7 rated it 3rd.

  Common improvements included:

  Forensic Pathologist
  Toxicologist
  Investigative Pers.
  "Increase Pers."
  Crime Technicians
  General Education
  Deputy Coroner
  Ballistics Expert
  Deputy M/E
  Increase Salaries
  Training Seminars
  Education in Investigation

Finding:

- Agency heads felt that the need for facility improvements ranked as their number one priority with personnel matters as the second priority.

27. QUESTION: In what areas would you like to conduct research?

Response and Findings:

- Common areas for research included:

  Sudden Infant Death

  Time of Death or Injury

  Auto Accidents/Safety

  Suicides

  Drowning

  Homicides

  Mechanism of Injuries

  Computerization

28. QUESTION: In your opinion, what are the significant problem areas facing medicolegal death investigators?

Response and Findings:

- Common problem areas cited were:

  Shortage of Funds

  Inadequate drug investigation techniques

  Untrained person (pathologists; law enforcement personnel; lawyers)

  Jurisdictional disputes

  Public awareness

CHAPTER IV

CRIMINALIST
(Individuals)

DEFINITION

A criminalist is an individual trained in the scientific and professional discipline of criminalistics, a science directed toward the recognition, identification, individualization and evaluation of physical evidence in the reconstruction of events related to a crime and in the connection or elimination of a suspect with that crime. Criminalistics involves the application of the natural sciences and scientifically based techniques to the analyses of such items of evidence as alcohol, blood, body fluids, cloth, drugs, explosives, firearms evidence, glass, hair and fiber, paints, etc.

SURVEY - BACKGROUND

The material to follow is a product of a survey taken in 1974-1975. The questionnaire was mailed to the membership of the American Academy of Forensic Sciences, the membership of the Firearms and Tool Mark Examiners, all regional forensic science organizations, a list of laboratories assembled from a broadly distributed letter query to government agencies, plus queries for expert witnesses placed in professional magazines.

Responses are as follows:

Questionnaires Mailed	Responses	% of Responses
2,500	610	25%

The results of the survey presented in this report are considered to be representative of the profession. This conclusion is based on the distribution of the respondents in terms of geographic location, size laboratory in which employed, work performed, years of experience, etc.

FINDINGS

- The profusion of specialist classifications indicated in the above answer, together with an equally varied list of job titles (official and unofficial), precludes making a meaningful comparison of qualifications and salaries.

- If it is ever intended to provide the profession with the capability of lateral transfer, it will first be necessary to develop a reasonably uniform system of job titles and descriptions.

- All caseload categories increased each year from 1971-1974.

- Narcotic and Drug cases represented the highest examination caseloads. Drinking-Driving was the next highest caseload.

- The highest ratio of court testimony to case examinations occurred with "Major Cases". Of all "Major Cases" examined, from 32% to 40% resulted in expert testimony. In contrast, only approximately 10% of the drug examinations resulted in expert testimony.

- The fact that many cases, which were examined by the respondents, did not result in expert testimony may have been caused by a myriad of factors: failure to prosecute; insufficiency of evidence; presentation of examination findings via depositions, etc.

- 88% of those with 1 to 5 years of experience reported holding at least a bachelor's degree -- a 15% increase over the percent for criminalists with any level of experience.

- The most common degree was a Bachelor of Science in Chemistry. Second was a Masters in Chemistry. Third was a Bachelors in Biology.

- The dramatic increase in the level of education suggests an early accomplishment of paragraph 3.a. of Standard 12.2 contained in the "National Conference on Criminal Justice" publication released on January 15, 1973.

- 70% of the respondents either taught or were students in forensic-science-related education/training.

- O-J-T and seminars constituted the most common forms of education/training.

- It is clearly indicated that the criminalist is education/training motivated.

- It is evident that the education and training programs in criminalistics are highly diversified.

- The criminalists rated the various education/training programs as generally good.

- Within this overall evaluation O-J-T rated the highest and professional meetings rated the lowest.

- The population was predominantly male with an average of 5.6 years experience. The mean age was 38. 73% reported having at least a bachelor's degree.

- The overwhelming majority of the respondents work full time in criminalistics laboratories. Only 25 reported working full time for other criminalistics-oriented agencies and 14 reported being in private practice.

- Criminalistics is not just a job where the professional sits at a bench. All respondents indicated that in the accomplishment of their job they had to actively deal with law enforcement agencies, prosecutor's offices and a myriad of other agencies.

- Contrary to the forensic involvement of the psychiatrist, the criminalist operates in a highly structured government system.

- 15% of the respondents were not full-time criminalistic laboratory employees. Of these over half are compensated for their services on a fixed salary basis.

- Very few cases handled by the respondents were civilian cases.

- As would be expected, the criminalist appears in court most often as a prosecution witness.

- Laboratory personnel, procedures, and instruments were well rated. However, administrative procedures and personnel policies were less satisfactory.

- Significantly, the areas which were rated least satisfactory were physical plant, work area and library facilities.

- The respondents were split as to the adequacy of meetings with counsel.

- The inadequacies of meetings notwithstanding, less than 10% felt that they could not adequately convey their findings in court.

RECOMMENDATIONS

- As a means to aid in the education, recruitment, promotion or lateral transfer of personnel, a reasonably flexible system of uniform titles and job classifications should be established.

- It is recommended that, as a means to ensure an adequate educational base for entry into the profession, and in concert with educational institutions, the criminalistics profession design a criminalistics accreditation program for educational institutions, to include: model curricula; faculty qualifications; and minimum facility requirements. As a stopgap, curricula should be recommended immediately for elective courses in criminalistic related science degree programs.

- It is recommended that the criminalistics profession establish a formal organization for the design of discipline-wide training of educationally qualified individuals, to include the design of curricula and training standards for formal on-the-job training, internships, continuing education seminars, training workshops, state-of-the-art publications, etc. There appears to be a well entrenched misunderstanding on the part of criminalists (as scientists and as supervisors or managers) concerning the role of educational institutions in preparing an individual for work in the criminalistics field. Education is concerned with theory--with the "why" of a concept or process. Training is concerned with technique--with the "how". Each is only incidentally involved in the other's role.

- As an item of high priority, the criminalistics profession should formally study the need for minimum entrance and promotion qualifications. This study should culminate in a decision regarding certification and recertification--recognizing that individual certification (whether in general terms or as specialists) is based on an entrepreneurial system of work whereas team certification involves the combined efforts of professionals plus auxiliary workers.

- A comparative study should be made of the criminalists' salary structure with that of related private industries. Such a study could be patterned after the system outlined in "The Federal Pay Comparability Act of 1970" (P.L. 91-656, 5 U.S.C. 5305-5308). That act stipulates that the rates of pay of classes of federal employees will be compared on an annual basis with the pay in private industry. Such a study should also include a comparison of the pay of criminalists versus counterparts in the appropriate state or local statutory pay system. The study should recognize geographic pay differentials.

- The criminalistics profession should assume the initiative in establishing an orderly system for the essential pre-trial meeting of laboratory personnel with counsel.

- A concerted effort should be made to involve all criminalists in formal research as a means to advance the profession and to increase the abilities of the individual. The initial goal should be to involve each criminalist in formal research for 10% of his time.

TABLE IV-1 - COMPOSITE CRIMINALIST JOB DESCRIPTION (MAJOR COMPONENTS) (Taken from Descriptions Used in Seven Different Laboratories)

TITLE: Director of Laboratory

EDUCATIONAL REQUIREMENTS: B.A. or B.S. in criminalistics, chemistry, biochemistry, closely related natural or physical sciences.

EXPERIENCE: Extensive experience in criminalistic laboratory work to include management and administration.

JOB DESCRIPTION: Responsible for: budget planning, personnel management, fiscal management, operational assignments and management, training programs, selected analytical work, selected court testimony.

TITLE: Supervising Criminalist, Senior Criminalist, Criminalist IV

EDUCATIONAL REQUIREMENTS: B.A. or B.S. in criminalistics, chemistry, biochemistry, closely related natural or physical sciences.

EXPERIENCE: 3 to 5 years experience in criminalistics laboratory.

JOB DESCRIPTION:

1. Under direction, supervises lower level criminalists and performs difficult and complex technical work relative to the collection, preservation and analysis of physical evidence.
2. Assists in planning, developing and recommending new methods, techniques and procedures in crime lab operations, training and staff development programs.
3. Trains lower level criminalists in skills required to attain courtroom qualification.
4. Appears in court as expert witness.
5. Consults with law enforcement officials, attorneys, etc.

TITLE: Criminalist III

EDUCATIONAL REQUIREMENTS: B.A. or B.S. in criminalistics, chemistry, biochemistry, closely related natural or physical sciences.

EXPERIENCE: 3 to 4 years experience in criminalistics laboratory.

JOB DESCRIPTION: (Same as Supervising Criminalist if Senior)

1. Under direction, supervises lower level criminalists and performs difficult and complex technical work relative to the collection, preservation and analysis of physical evidence.
2. Trains lower level criminalists in skills required to attain courtroom qualification.
3. Appears in court as expert witness.
4. Consults with law enforcement officials, attorneys, etc.

TITLE: Criminalist II

EDUCATIONAL REQUIREMENTS: B.A. or B.S. in criminalistics, chemistry, biochemistry, closely related natural or physical sciences.

EXPERIENCE: 1 to 2 years experience in criminalistic laboratory.

JOB DESCRIPTION:

1. May examine crime scenes.
2. Performs tests relative to the analysis of physical evidence.
3. Trains lower level criminalists in skills required to attain courtroom qualification.
4. Appears in court as expert witness.

TITLE: Criminalist I

EDUCATIONAL REQUIREMENTS: B.A. or B.S. in criminalistics, chemistry, biochemistry, closely related natural or physical sciences.

EXPERIENCE: None (entry level); may require a 1 year training program

JOB DESCRIPTION: 1. Under direct supervision performs tasks in all areas of: collection, preservation and scientific analysis of physical evidence; 2. May testify in court as expert witness.

TITLE: Criminalist Aide/Intern/Trainee

EDUCATIONAL REQUIREMENTS: 2 years college to B.A. or B.S. in criminalistics, chemistry, biochemistry, closely related natural or physical sciences.

EXPERIENCE: None (entry level)

JOB DESCRIPTION: 1. Assist professional staff in all areas.

1. QUESTION: There are many ways to define specialists within the broad field of Criminalistics. Which of the following titles most closely match your areas of expertise? (Check all appropriate)

☐ Criminalist
☐ Analyst
☐ Laboratory Technician
☐ Chemist
  ☐ Analytical
  ☐ Police
  ☐ Drug
  ☐ Forensic
☐ Toxicologist
☐ Forensic Toxicologist
☐ Instrumental Analyst

☐ Blood Alcohol Analyst
☐ Forensic Serologist
☐ Stain Analyst
☐ Pharmacologist
☐ Questioned Document Examiner
☐ Gambling Analyst
☐ Trace Evidence Analyst
☐ Firearms Evidence Examiner
☐ Comparative Micrographer (Shoe, tool, tire, etc.) ____________
☐ Polygraph Examiner
☐ Voice Identification Specialist

☐ Fingerprint Examiner
☐ Photographer
☐ Fire/Arson Investigator
☐ Bombs/Explosives Specialist
☐ Automotive Accident Analyst
☐ Breath Test Specialist
☐ Others (Specify) ____________
____

Response:

264	Criminalist
130	Analyst
52	Laboratory Technician
138	Analytical Chemist
83	Police Chemist
186	Drug Chemist
214	Forensic Chemist
39	Toxicologist
66	Forensic Toxicologist
145	Instrumental Analyst
141	Blood Alcohol Analyst
129	Forensic Serologist
81	Stain Analyst
11	Pharmacologist
45	Questioned Document
4	Gambling Analyst
162	Trace Evidence Analyst
142	Firearms Evidence Analyst
137	Comparative Micrographer
21	Polygraph Examiner
4	Voice Identification
137	Fingerprint Examiner
146	Photographer
64	Fire/Arson Examiner
57	Bombs/Explosives Specialist
30	Automotive Accident Analyst
87	Breath Test Specialist

Response Analysis:

- Further investigation revealed an even more confusing list of official and unofficial job titles.

- At Table IV-1 is a series of job descriptions (major components) compiled from an analysis of descriptions used by seven laboratories, chosen at random.

Finding:

- The profusion of specialist classifications indicated in the above answer, together with an equally varied list of job titles (official and unofficial), precludes making a meaningful comparison of qualifications and salaries.

- If it is ever intended to provide the profession with the capability of lateral transfer, it will first be necessary to develop a reasonably uniform system of job titles and descriptions.

2. QUESTION: Approximately how many cases in the following categories have you examined/given expert testimony?

Category	Examined				Expert Testimony			
	1971	1972	1973	1974 (Est.)	1971	1972	1973	1974 (Est.)
Drinking-Driving								
Narcotic & Dangerous Drugs								
Forensic Toxicology								
Major Cases								
Other (Specify)								

Response:

- Mean Cases Examined

Category	1971	1972	1973	1974
Drinking-Driving	30	35	37	37
Narcotic & Drugs	75	80	100	100
Forensic Toxicology	20	20	21	21
Major Cases	18	25	26	27
Other	20	21	22	23

- Mean Cases-Expert Testimony

Category	1971	1972	1973	1974
Drinking-Driving	6	6	7	7
Narcotic & Drugs	8	9	9	9
Forensic Toxicology	3	3	3	3
Major Cases	7	8	10	11
Other	4	4	5	5

Response Analysis:

- The analysis of laboratory operations is not within the purview of this study. Our concern is with the activities of personnel. A study of laboratory operations is believed to be the subject of another LEAA research grant.

- It is recognized that the definitions "caseload" and "examination", are not uniform throughout the United States. It is also acknowledged that individual record keeping varies radically as to the level of sophistication--if, in fact, any individual records are kept. This accounts for the fact that 30% of the respondents failed to answer the question.

Finding:

- All caseload categories increased each year from 1971-1974.

- Narcotic and Drug cases represented the highest examination caseloads. Drinking-Driving was the next highest caseload.

- The highest ratio of court testimony to case examinations occurred with "Major Cases". Of all "Major Cases" examined, from 32% to 40% resulted in expert testimony. In contrast, only approximately 10% of the drug examinations resulted in expert testimony.

- The fact that many cases, which were examined by the respondents, did not result in expert testimony may have been caused by a myriad of factors: failure to prosecute; insufficiency of evidence; presentation of examination findings via depositions, etc.

3. QUESTION:

Please indicate your formal education background:

High School or College	Year	Diploma/ Degree	Major

Response:

- Highest level of education attained:

55	High School
94	Some College
295	Bachelor's Degree
171	Graduate Work

- Approximately 87% of all respondents have taken some college work of which 73% acquired at least a bachelor's degree.

Response Analysis:

- A further study of the 321 who reported that they had from 1 to 5 years of experience revealed the following distribution of areas of formal education. (It should be noted that 10 reported two major areas of study. Each is reported in the table.)

Basic Area of Study	Degree Bachelors	Masters	Ph.D.
Chemistry	100	42	19
Biochemistry	7	3	6
Biology	33	8	0
Mathematics	3	0	1
Physics	2	1	1
"Forensic Science"	1	6	0
Criminalistics	9	8	0
Police Science	3	0	0
Other Degreed areas	25	4	0
Total	183	72	27

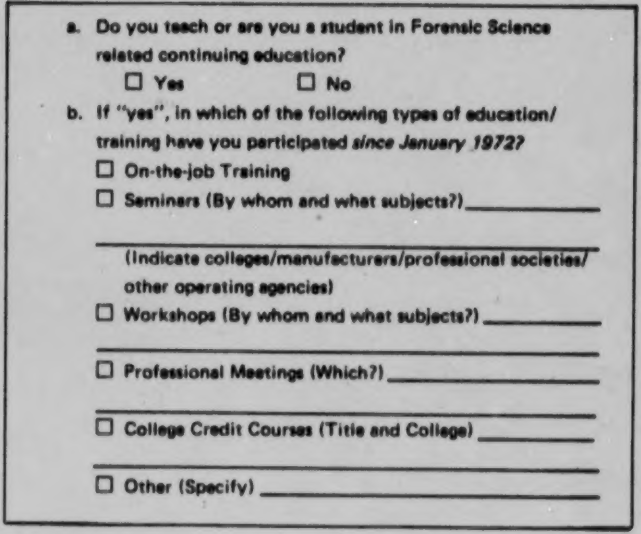
Note: 22 - Some College
10 - High School only

- In a 1969-1970 study accomplished by the California Council on Criminal Justice only 41% of the respondents reported having a baccalaureate degree or higher.

Finding:

- 88% of those with 1 to 5 years of experience reported holding at least a bachelor's degree -- a 15% increase over the percent for criminalists with any level of experience.
- The most common degree was a Bachelor of Science in Chemistry. Second was a Masters in Chemistry. Third was a Bachelors in Biology.
- The dramatic increase in the level of education suggests an early accomplishment of paragraph 3.a. of Standard 12.2 contained in the "National Conference on Criminal Justice" publication released on January 15, 1973.

4. QUESTION:



a. Do you teach or are you a student in Forensic Science related continuing education?

☐ Yes ☐ No

b. If "yes", in which of the following types of education/training have you participated *since January 1972?*

☐ On-the-job Training
☐ Seminars (By whom and what subjects?) ____________
(Indicate colleges/manufacturers/professional societies/other operating agencies)
☐ Workshops (By whom and what subjects?) ____________
☐ Professional Meetings (Which?) ____________
☐ College Credit Courses (Title and College) ____________
☐ Other (Specify) ____________

Response:

436	Yes
187	No

- Of those who said "Yes" the following types of education/training were cited:

307	O-J-T
300	Seminars
152	Workshops
252	Professional Meetings
219	College Credit Courses
74	Others

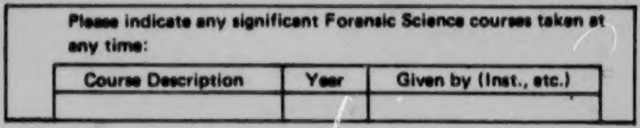
Findings:

- 70% of the respondents either taught or were students in forensic science related education/training.

- O-J-T and seminars constituted the most common forms of education/training.

- It is clearly indicated that the criminalist is education/training motivated.

5. QUESTION:



Please indicate any significant Forensic Science courses taken at any time:

Course Description	Year	Given by (Inst., etc.)

Response:

- 574 subjects or courses were cited with frequencies as shown below:

95	Fingerprints	12	Chemistry
52	Criminalistics	11	Violent Crime Investigation
45	Microscopy	10	Breathalyzer
44	Blood	8	Explosives
28	Drugs	8	Hair and Fiber
22	Document Examination	7	Spectroscopy
20	Crime Scene Search	6	Polygraph
20	Instrument Analysis	4	Trace Evidence
18	Toxicology	4	Tool Marks
17	Firearms	3	Identification Kits
16	Photography	2	Arson
16	Forensic Pathology	32	General
15	Laboratory Management		(18) Forensic Science
15	Criminal Justice & Law		(10) Police Science
14	Criminal Investigation		(4) Criminology

Plus approximately 30 course subjects that were listed once.

Finding:

- It is evident that the education and training programs in criminalistics are highly diversified.

6. QUESTION:

Would you please provide an overall evaluation of your *Forensic* Education and training (as applicable).

	Outstanding	Good	Fair	Poor
Formal Education (Degreed Program)	☐	☐	☐	☐
On-the-Job Training	☐	☐	☐	☐
Continuing Education (Short Courses)	☐	☐	☐	☐
Seminars and Workshops	☐	☐	☐	☐
Professional Meetings	☐	☐	☐	☐

Response:

Types	Outstanding	Good	Fair	Poor
Formal Education	85	251	80	50
On-the-Job Training	164	329	91	16
Continuing Education	50	252	109	87
Seminars & Workshops	64	255	141	83
Professional Meetings	81	237	151	82

Findings:

- The criminalists rated the various education/training programs as generally good.
- Within this overall evaluation O-J-T rated the highest and professional meetings rated the lowest.

7. **QUESTION:**

So that we may assemble data for counseling and recruiting, please provide information regarding your Forensic Science career experience in the following space. (Start with your first job or consultation and show any others you consider to have been significant in your career.)

Position Description or Title	Year	Salary Range	Reason for Change
1.			
2.			

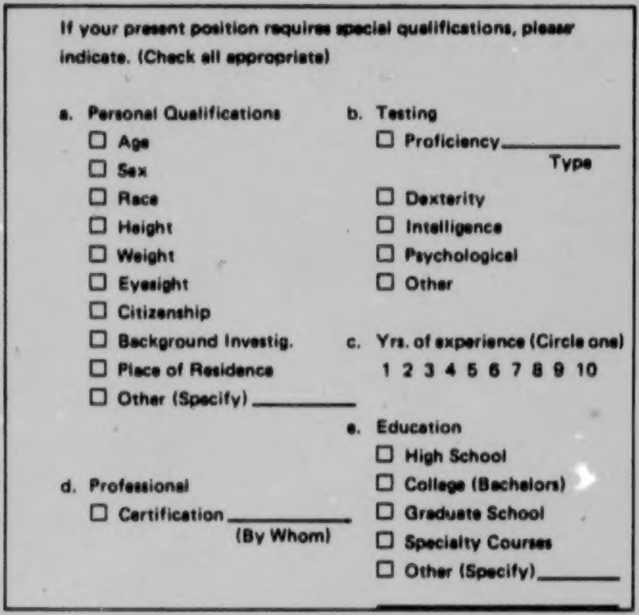
Response: Frequency Distribution of Salary (in thousands of $)

-

	$ 6 - 10	$ 11 - 15	$16 - 20	$ 21+
Lab. Dir.	2	3	6	10
Lab. Ex O	-	-	2	
Suprv.	-	6	5	1
Administrator		2	2	1
Chief Criminalist	1	1	10	4
Criminalist I	16	39	6	1
Criminalist II	3	20	12	-
Criminalist III	1	5	5	2
Criminalist IV				1
Criminalist V			1	1
Forensic Chemist	22	37	23	1
Toxicologist	1		1	0
Scientist	2	5	6	0
Analyst I	8	19	2	2
Analyst II	3	1	-	-
Fire Arms - Tool Marks Examiner	5	4	5	1
Q.D. Examiner	1	3	-	1
Lab. Technician	10	7	-	-
Photographer	6	1	1	-
Polygraph Operator	-	3	-	-
I. D. Officer	24	11	6	-

- The limited data provided on years of experience per job description was not considered to be valid.

8. QUESTION:



If your present position requires special qualifications, please indicate. (Check all appropriate)

a. Personal Qualifications
- ☐ Age
- ☐ Sex
- ☐ Race
- ☐ Height
- ☐ Weight
- ☐ Eyesight
- ☐ Citizenship
- ☐ Background Investig.
- ☐ Place of Residence
- ☐ Other (Specify) ________

b. Testing
- ☐ Proficiency ________ Type
- ☐ Dexterity
- ☐ Intelligence
- ☐ Psychological
- ☐ Other

c. Yrs. of experience (Circle one)

1 2 3 4 5 6 7 8 9 10

d. Professional
- ☐ Certification ________ (By Whom)

e. Education
- ☐ High School
- ☐ College (Bachelors)
- ☐ Graduate School
- ☐ Specialty Courses
- ☐ Other (Specify) ________

Response:

- The only personal qualifications that were cited with any frequency were citizenship and background investigation. Least often cited was age.
- Professional certification was cited by 116 respondents but none cited "By Whom".
- The average number of years of required experience was 4.5 years.
- The average required education level was a bachelor's degree.

9. QUESTION:

The following information will help to establish geographic and statistical information:

a. Year of birth: ______________
b. Sex ____ Male ____ Female
c. Work or home zip: ______________
d. Total number of years in Criminalistics: ______________

____
Name and Address (optional)

Response:

- See Table IV-2, Profile of the Criminalist
- See Map IV-1, General Location of Laboratories at which the respondents work

Finding:

- The population was predominantly male with an average of 5.6 years experience. The mean age was 38. 73% reported having at least a bachelor's degree.

TABLE IV-2

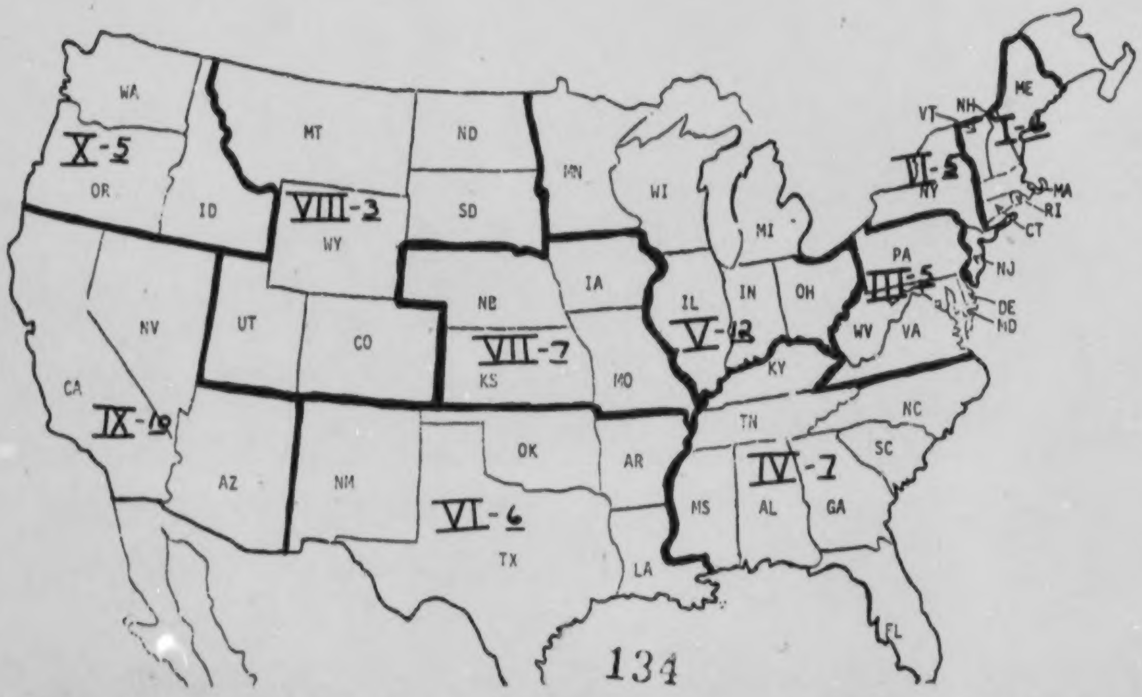
CRIMINALIST PROFILE

EMPLOYMENT	NO.	SEX		EDUCATION				AGE						YRS. EXPERIENCE				
		M	F	H.S.	UNDER GRAD.	B/S B/A	POST GRAD.	-20	21-30	31-40	41-50	51-60	65+	1-5	6-10	11-20	21-30	30+
Federal	81	71	8	4	4	37	33	0	22	28	23	5	1	42	12	16	2	2
State	243	208	31	12	30	142	55	0	107	85	31	16	0	158	40	24	12	4
County	104	85	19	8	20	39	35	0	28	35	21	17	1	46	28	16	10	1
Municipal	135	112	20	21	34	51	18	0	31	52	37	15	0	59	29	28	9	0
Other	57	49	8	10	5	19	21	0	10	12	13	12	7	14	15	8	10	5
Not Indicated	22	16	4	0	1	7	9	0	0	6	4	7	2	2	3	5	4	2
Total	642	541	90	55	94	295	171	0	198	218	129	72	11	321	127	97	47	14

MAP IV-1

General Location of Laboratories (By LEAA Regions) at Which Respondents Work

(Approximately 69% of all respondents disclose their place of residence or place of employment)


WA
OR
X-5
ID
MT
VIII-3
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ND
SD
MN
WI
MI
NB
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IL
IN
OH
V-12
VII-7
KS
MO
CA
NV
UT
CO
IX-10
AZ
NM
OK
TX
VI-6
AR
LA
MS
AL
GA
IV-7
TN
KY
NC
SC
FL
WV
VA
PA
III-5
NY
II-5
VT
NH
ME
I-6
MA
RI
CT
NJ
DE
MD

10. QUESTION:

Please indicate what percent of your *normal working time* is spent on each of the following:

________ % For a laboratory which conducts Criminalistics examinations.

________ % For other Criminalistic oriented agencies (Types) ____________________

________ % In Private Criminalistic Practice (Type) ________

Response:

-

% of Time Spent	In a Crime Lab.	In Other Crime Agency	In Private Work	In Non-Criminalistics
0 - 9%	91	528	526	531
10 - 19%	19	24	7	19
20 - 29%	8	8	6	9
30 - 39%	2	2	0	5
40 - 59%	15	5	3	12
60 - 69%	9	1	1	4
70 - 79%	7	0	3	4
80 - 89%	22	4	1	2
90 - 100%	423	25	14	12

Finding:

- The overwhelming majority of the respondents work full time in criminalistics laboratories. Only 25 reported working full time for other criminalistics oriented agencies and 14 reported being in private practice.

11. **QUESTION:**

Which of the following describe the organizational jurisdiction of the above Criminalistics laboratory? (Check all applicable)

a. ☐ Federal
☐ State
☐ County
☐ Municipal
☐ Other (Specify) ____________

☐ Regional, serving:
  ☐ Group of States
  ☐ Group of Counties
  ☐ Group of Cities/Counties
  ☐ Group of Cities

Response:

- Organizational jurisdictions of reporting criminalists were distributed as:

81	Federal
243	State
104	County
135	Municipal
57	Other

- Answers to the regional question were considered to be invalid.

12. QUESTION:

a. Is the laboratory part of a satellite system? ☐ Yes ☐ No

Response:

- 184 Yes

  412 No

13. QUESTION:

Approximately what percent of your time is spent in the following Criminalistic activities?

_____ % Administration
_____ % Supervision
_____ % Laboratory Analyses, Examinations, Comparisons
_____ % Report Writing
_____ % Official Travel
_____ % Court Appearances
_____ % Presenting findings to other agencies (Police, Prosecution, Coroner, Corrections, etc.)
_____ % Research
_____ % Scientific Training
_____ % Other Instructional Duties (such as Roll Call teaching)
_____ % Other (Specify) _____

Response:

- Time was reported as spent in the following ways:

	Admin.	Suprv.	Lab Work	Report Writing	Travel
0% or blank	336	331	79	118	227
1% - 9%	84	77	21	194	278
10% - 19%	71	86	37	213	73
20% - 29%	45	52	34	58	20
30% - 39%	18	17	27	12	2
40% - 59%	19	18	138	3	0
60% - 69%	5	5	73	0	0
70% - 79%	2	5	96	3	0
80% - 89%	5	3	67	0	0
90% - 100%	14	4	27	0	0

(Continued)

	Court	Inter Agency	Research	Sci. Trng.	Other Instruction
0% or blank	83	383	326	288	456
1% - 9%	320	174	190	235	122
10% - 19%	149	35	60	57	19
20% - 29%	37	5	9	7	2
30% - 39%	8	1	7	3	1
40% - 59%	4	2	6	6	1
60% - 69%	0	1	2	0	0
70% - 79%	0	0	0	2	0
80% - 89%	0	0	1	2	0
90% - 100%	0	0	0	1	0

14. **QUESTION:**

Please indicate the agencies and individuals with whom you have dealt in the past year in the course of your Criminalistics work:

- ☐ Police Departments
- ☐ Sheriff's Offices
- ☐ State Police
- ☐ Environmental Agencies
- ☐ Department of Agriculture
- ☐ FBI
- ☐ Other Federal Agencies
- ☐ Other Criminalistic Labs
- ☐ Toxicology Laboratories
- ☐ Disaster Squads
- ☐ Prosecutor's Office
- ☐ Defense
- ☐ Corrections
- ☐ Coroner's or Medical Examiner's Offices
- ☐ Forensic Pathologists
- ☐ Forensic Psychiatrists
- ☐ Forensic Odontologists/ Anthropologists
- ☐ Criminalists in private practice
- ☐ Health Agencies
- ☐ Educational Institutes
- ☐ Research Organizations
- ☐ Foreign Agencies
- ☐ Other (Specify) ________

Response:

559	Police Department
508	Sheriff's Office
455	State Police
74	Environmental Agencies
51	Dept. of Agriculture
325	FBI
347	Other Federal
362	Other
169	Toxicology Lab
29	Disaster Squads
495	Prosecutor's Office
321	Defense
186	Corrections
379	Coroner or Medical Examiner
243	Forensic Pathologist
19	Forensic Psychiatrist
43	Forensic Odontologist/ Anthropologist
143	Private Practice Criminalists
133	Health Agencies
209	Educational Institutes
138	Research Organizations
76	Foreign Agencies

Finding:

- Criminalistics is not just a job where the professional sits at a bench. All respondents indicated that in the accomplishment of their job they had to actively deal with law enforcement agencies, prosecutor's offices and a myriad of other agencies.

- Contrary to the forensic involvement of the psychiatrist, the criminalist operates in a highly structured government system.

15. QUESTION:

a. If you are employed by a Criminalistics laboratory are you authorized to accept cases privately? ☐ Yes ☐ No

b. If "yes", are you permitted to use official:

- ☐ Facilities
- ☐ Equipment
- ☐ Supplies
- ☐ Working time (Normal)

c. If "yes", are any of the following restrictions placed on the practice?

- ☐ Time Limit
- ☐ Derived Income Limit
- ☐ Limited to Civil Cases
- ☐ Cannot testify in court
- ☐ Geographic Restrictions (such as "out of state," etc.)
- ☐ Others (Specify) ______________________

Response:

- 103 Yes

  438 No

- Of those who answered "Yes" the majority were restricted as to use of facilities, equipment, supplies, and normal work hours. They were, however, generally free to select the cases on which they would work.

- Only 19 of the 103 respondents indicated that they earned more than 10% of their annual income from outside casework.

16. QUESTION:

If you are *not* a full time Criminalistics laboratory or other Criminalistically oriented agency employee, how are you paid for your laboratory service?

☐ **Fixed Salary**
☐ **Fee-for-Service**
☐ **Hourly Wage**
☐ **Other (Specify)** ______________________

Response:

- 101 persons were not full-time criminalistics agency employees and they were paid as follows:

53	Fixed Salary
33	Fee-for-Service
7	Hourly Wage
8	Other

Finding:

- 15% of the respondents were not full-time criminalistic laboratory employees. Of these over half were compensated for their services on a fixed salary basis.

17. QUESTION:

a. If you perform private case work is it done on the basis of:
(Check all appropriate)
☐ Fee-For-Service
☐ Contract
☐ Salary
☐ Free
☐ Other (Specify) ____________________

b. In your private case work from whom are the cases referred?
☐ Law Enforcement
☐ Attorneys
☐ Colleagues
☐ Insurance Companies
☐ Coroners/Medical Examiners
☐ Other Laboratories
☐ Others (Specify) __________

Response:

- Basis for remuneration:

  115 Fee-for-Service

  18 Contract

  3 Salary

  29 Free

  13 Other (witness fee, hourly, expenses, etc.)

- From whom cases referred:

  50 Law Enforcement

  93 Attorneys

  37 Colleagues

  46 Insurance Companies

  14 Coroners/Medical Examiners

  31 Other Laboratories

  23 Others (commercial business, courts, banks, etc.)

18. **QUESTION:** *Approximately* what percent of your cases are civil cases?_____%

Response:

- Work was allocated to civil cases in the following percent:

% of Cases are Civil	Number of Respondents
0%	371
1% - 9%	72
10% - 19%	15
20% - 29%	8
30% - 39%	4
40% - 59%	5
60% - 69%	1
70% - 79%	1
80% - 89%	8
90% - 100%	18

Finding:

- Very few cases handled by the respondents were civilian cases.

19. **QUESTION:** In what *approximate* percentage of the time do you work for the defense?______ %

Response:

-

% Work for Defense	Number of Respondents
0%	300
1 - 9%	108
10 - 19%	21
20 - 29%	4
30 - 39%	4
40 - 59%	14
60 - 69%	3
70 - 79%	4
80 - 89%	8
90 - 100%	14

Finding:

- As would be expected, the criminalist appears in court most often as a prosecution witness.

20. QUESTION:

> Please list (in order of frequency) the topics on which you are most often called to testify? (Please limit to four.)
>
> 1. ____________________
>
> 2. ____________________

Response:

- The more common topics cited were:

233	Listed Narcotics and Dangerous Drugs as one of the topics on which they testified.
165	List Blood/Alcohol, with an additional 37 listing "Drunk Driving".
100	Firearms Examination
72	Blood Typing
65	Latent Fingerprints
57	Chain of Evidence/Records
55	Trace Evidence
34	Tool Marks
30	Rape
27	Crime Scene (including Sketches)
25	Hair & Fiber
20	Questioned Documents (Note that this area was the topic of a separate questionnaire. It is covered in a separate chapter of this report.)

21. QUESTION:

a. In your Criminalistic laboratory employment are you:
☐ A Sworn Officer
☐ A Civilian

b. If "sworn", have you completed the standard basic police or deputy training prescribed for your agency? ☐ Yes ☐ No

c. If "sworn", were you:
☐ Transferred to the laboratory from police or deputy duty
☐ Hired directly for the laboratory

Response:

- a. 252 Sworn Officers

  302 Civilians

- b. Of the 252 who answered "Sworn" 198 completed basic police training.

- c. Of the 252 who were "Sworn" 138 indicated that they were transferred from police or deputy duty and 105 were hired directly for the laboratory.

22. **QUESTION:**

How would you rate the following in your Criminalistics organization?

	Outstanding	Good	Fair	Poor
Supporting Personnel	☐	☐	☐	☐
Physical Plant	☐	☐	☐	☐
Size of work area	☐	☐	☐	☐
Work Load	☐	☐	☐	☐
Instruments	☐	☐	☐	☐
Other Equipment	☐	☐	☐	☐
Supervision	☐	☐	☐	☐
Administrative Procedures	☐	☐	☐	☐
Laboratory Procedures	☐	☐	☐	☐
Library Facilities	☐	☐	☐	☐
Budget Adequacy	☐	☐	☐	☐
Personnel Policies	☐	☐	☐	☐

Response:

●	Outstanding	Good	Fair	Poor
Support Personnel	169	282	99	29
Physical Plant	83	208	150	136
Work Area (size)	75	172	166	178
Work Load	120	258	116	85
Instruments	145	279	115	54
Other Equipment	81	265	165	67
Supervision	114	267	120	66
Administrative Procedures	47	232	199	102
Laboratory Procedures	108	362	92	23
Library Facilities	53	178	180	176
Budget	35	173	167	24
Personnel Policies	45	225	197	108

Findings:

- Laboratory personnel, procedures, and instruments were well rated. However, administrative procedures and personnel policies were less satisfactory.
- Significantly, the areas which were rated least satisfactory were physical plant, work area and library facilities.

23. QUESTION:

What can be done to raise the level of understanding and acceptance of Criminalistics by these groups?

Response:

- 160 More and better training and education to include: more group meetings and seminars; community college level offerings in criminalistics; formalized training as opposed to casual O-J-T, etc.
- 139 More communication, to include: the exchange of professional state-of-the-art information; intra-professional; inter-professional; with "Users"; and with the public.

24. **QUESTION:**

a. Are your meetings with counsel adequate to prepare you for court presentations?
☐ Yes ☐ No

b. If "no", in what ways can this be improved? ____________

Response:

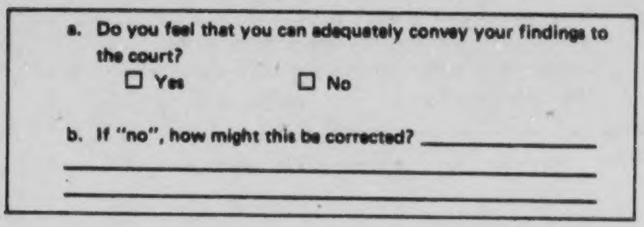
- 300 Yes
  277 No
- Of those who responded "No" the following were the more common recommendations for improvement of meetings with counsel:

71	Conduct pre-trial conferences.
50	Counsel take more time to prepare the case.
26	Counsel be provided education (seminars) on the capabilities and limitations of criminalistics.

Finding:

- The respondents were split as to the adequacy of meetings with counsel.

25. QUESTION:



a. Do you feel that you can adequately convey your findings to the court?

☐ Yes ☐ No

b. If "no", how might this be corrected? ____________

____

____

Response:

- 546 Yes

  54 No

- Of those who responded "No" the following more common corrections were suggested:

  Counsel to be trained in how to ask questions.

  Witness to be given more liberty in answering questions.

  Use court-oriented video tapes to demonstrate laboratory procedures.

Finding:

- The inadequacies of meetings notwithstanding (see Question 24), less than 10% felt that they could not adequately convey their findings in court.

26. QUESTION:

Please indicate briefly what you believe should be the minimum standards for *education, training, and experience* for individuals entering your Forensic specialty.

Response:

- Entry Standards

Education

209	College Degree
27	Two Years of College
22	High School
20	Graduate Degree

On-The-Job Training

55	No specified time
12	1 to 3 years
2	4 to 6 years

Experience

23	"Proper" experience
15	1 to 3 years
2	4 to 6 years

Response Analysis:

- 67 of the 209 who recommended a college degree specified "Chemistry". The others cited related science fields.

27. QUESTION:

In your field what areas (management, training, technical, etc.) are most in need of research? ______________________

____

____

Response:

- 278 Research in Technical areas. The more common areas were:
  - (52) "All Areas" and "Methodologies"
  - (14) Drug Analysis
  - (10) "Instrumentation"
  - (9) Standards
  - (9) New methods (hair, explosives, trace, blood, soil etc.)

  107 Research in Management Procedures (operations, communications, budgets, personnel, certification, computerization, etc.)

  170 Research in Training & Education Practices (laboratory personnel, law enforcement personnel, interprofessional, the public

CHAPTER V

CRIMINALISTICS LABORATORY

DEFINITION

The Criminalistics Laboratory is concerned with the processing of physical evidence in the furtherance of criminal justice. As such it is devoted to the recognition, identification, individualization and evaluation of physical evidence. Results of analyses are presented and defended in a court of law.

SURVEY BACKGROUND

The material to follow is the product of a survey taken in 1974-1975. The questionnaire was mailed to the laboratories included on separate lists assembled by the U.S. Department of Justice, the FBI, the National Bureau of Standards, the Criminalistics Laboratory Information System, and the Forensic Sciences Foundation.

Responses were as follows:

Questionnaires Mailed	Responses	% of Response
246	111 (Policy)	46%
	64 (Data)	26%

The number of responses noted above reflects the fact that many state satellite systems returned one consolidated questionnaire for their entire system. In so doing, they reported personnel policy matters for the system but their quantitative data applied only to the reporting laboratory.

On the basis of distribution by geographic location, organizational jurisdiction, population served, and size laboratory, it is considered that the survey is representative of all the laboratories in the United States.

FINDINGS

- There has been a significant increase in state satellite systems in recent years.
- No standard criteria exists by which to categorize criminalistic laboratories.
- No accepted list of criminalistic laboratories exists.
- Judging by the paucity of management data provided by the laboratories it is evident that one or more of the following conditions prevail: (1) the data requested is not collected by the laboratory; (2) it is not readily available; (3) the laboratories were reluctant to reveal the data.
- The reduced involvement of laboratory directors in the category "Receive Allocations" for personnel is consistent with a centralized pay system.
- Heads of laboratories are most often responsible for personnel management matters and relatively less responsible for decision-making concerning fiscal review.
- The laboratories experienced an approximately 13% personnel growth rate over the four-year period ending in 1974. Most of this growth is concentrated in the staffing of satellite laboratories.
- The anticipated growth rate for the next three-year period ending in 1977 is 8%.
- The use of the title "Criminalist" is growing in popularity. (For a study of criminalist job descriptions see Chapter IV: Criminalist, Individuals.)
- The forensic science laboratories have a remarkably stable labor force.

- There is a noticeable lack of budget planning and allocation devoted exclusively to research. This is augmented by other data which showed that few, if any, research positions were authorized in U.S.A. laboratories.

- Approximately 25% of the respondents either did not have necessary equipment or were dissatisfied with it in quantity or quality.

- Quite logically, many smaller laboratories use consultants to augment the laboratory staff, paying them on a fee-for-service basis.

- Most laboratories do not have time to engage in research, per se.

- A significant number of laboratories now require a bachelor degree as a minimum entry qualification. Some require demonstrated proficiency in addition to education.

- Most laboratories do not have a "merit" system of evaluation for promotion. Very few cited any specific standards for promotion.

- Laboratories do not have established qualification standards for technical support personnel.

- The average mandatory retirement age within the criminalistics profession has a favorable impact on the promotion ladder system.

- The only discernable difference in benefits between sworn personnel and civilians exists in those agencies where sworn personnel have no upper limit to the number of days of authorized sick leave. In those cases, the civilians were generally limited to a specific number of days.

- The recently imposed restriction by most agencies on attendance at professional meetings is not reflected in the data.

- With the possible exception of professional meetings and dues, the benefits extended to criminalistics personnel are the same as those enjoyed by all other personnel within a particular governmental entity.

- The fact that 2/3 of the laboratories offer educational allowances is encouraging.

- Most laboratories conduct on-the-job training but at least 60% of them do not have a formal O-J-T program (outlines, reading assignments, etc.)

- Slightly over 60 percent of the agencies provide training for individuals from outside the agency.

- The most universal need of criminalistics laboratories is for more space.

- The next most common need is for more personnel.

RECOMMENDATIONS

- Sets of criteria should be established by which to categorize the criminalistics laboratories in the U.S.A. and a census of laboratories should be taken.

- Continuing efforts should be maintained to expand the concept of regional or satellite laboratories. Although the most recently inaugurated systems have been under state jurisdiction, the possibility of establishing a multi-state (regional) system in less populated sections of the United States should be explored.

- A detailed study should be made of criminalistic laboratory budgets and funding procedures in order to assist the entire industry in acquiring necessary resources (men, money, and material) for current levels of work and to provide necessary planning information for future incremental increases in laboratory workloads.

- Standards relating to workload, staffing, equipment, etc., should be established: to include standardized definitions for such mundane categories as "caseloads", "examinations", etc.

- A national personnel data bank for managerial use should be implemented. Selected information from the banks should be given separate status in such federal publications as the FBI's "Uniform Crime Reports" and various Department of Labor reports.

- A detailed national study should be made of laboratory position titles, job descriptions, salary structures, benefit programs, and entry and promotion qualifications. The profusion of current titles and job descriptions is detrimental to education planning and recruitment and it precludes reasonable lateral transfer. It is a necessary requisite to the implementation of nation-wide career programs. Given standard sets of titles and job descriptions a census of criminalistics should be made.

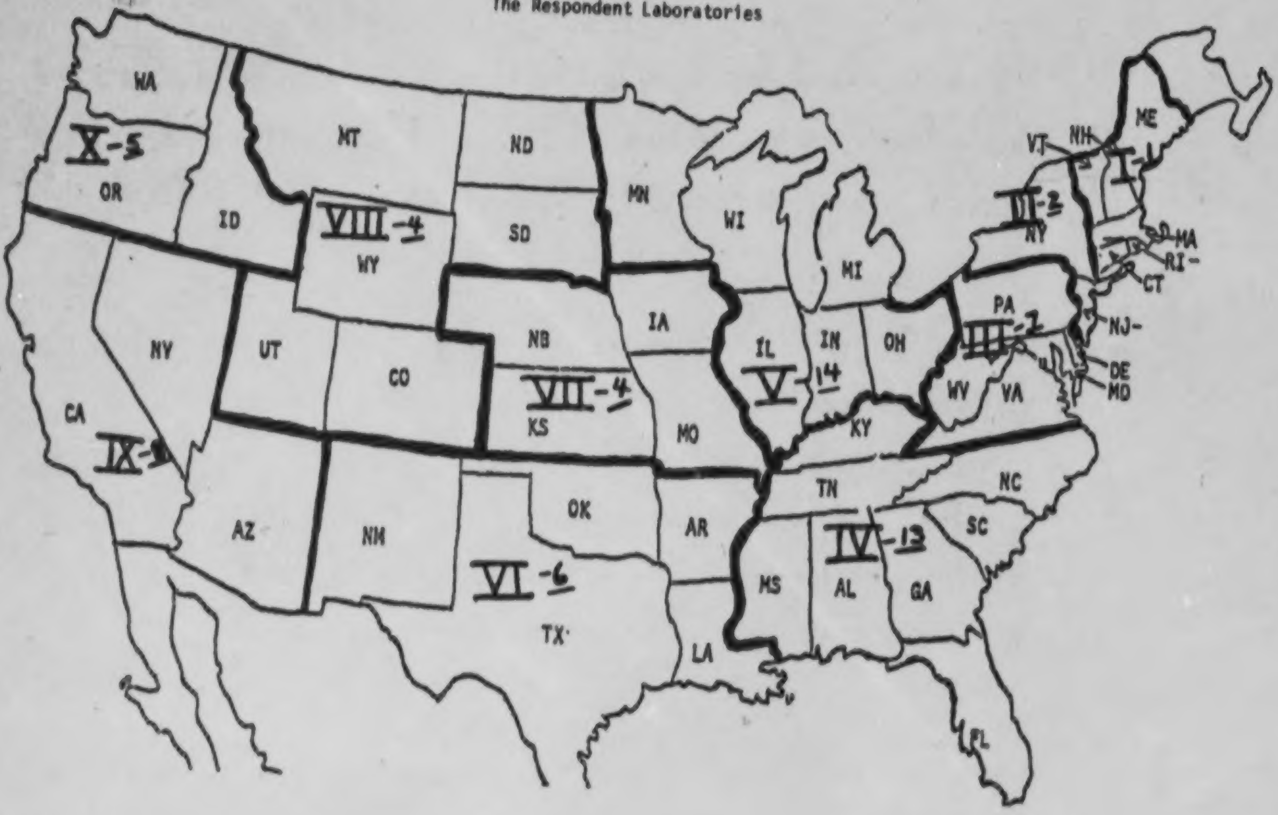
- Laboratory directors should initiate action to ensure that their assigned responsibilities are matched with the necessary authority to execute those responsibilities. As an example, laboratory directors, nation-wide, are most often assigned the decision-making responsibility for personnel management in their laboratories--yet they least often have budgetary responsibilities in this area.

- A series of research positions should be funded by the Federal government and established at selected laboratories throughout the United States. Additionally, local resources should be allocated to ensure that approximately 10% of each criminalist's time is devoted to research designed to advance the state-of-the-art, i.e., research which is independent of investigation associated with a given case.

- The criminalist profession should establish immediately a committee to study the short term and long range needs of the profession pertaining to: 1) certification of individuals and/or scientific teams; 2) accreditation of facilities; 3) accreditation of educational programs.

MAP V-1

Location, By LEAA REGIONS, of The Respondent Laboratories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WY
SD
NB
IA
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OH
PA
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NJ-
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NY
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CO
VII-4
KS
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KY
AZ
NM
OK
AR
TN
NC
SC
IV-13
VI-6
MS
AL
GA
TX
LA
FL

1. QUESTION:

Which of the following describe the organizational jurisdiction of your laboratory? (Check all appropriate)

a. ☐ Federal
☐ State
☐ County
☐ Municipal
☐ Other (Specify) ____________

b. The laboratory is under the control of:
☐ Police Department(s)
☐ Sheriff's Office(s)
☐ Prosecutor's Office(s)

Response:

- 11% of the responding laboratories were Federal

  54% were State

  16% were County

  10% were Municipal[1.]

  8% were Regional

- The laboratories[2.] served varying population areas.

Nr. of Laboratories	Population Served
6	under
12	100,000 to 200,000
15	200,000 to 400,000
10	400,000 to 600,000
7	600,000 to 800,000
4	800,000 to 1,000,000
13	1,000,000 to 2,000,000
6	2,000,000 to 4,000,000

- See Map V-1 for geographic distribution of responding laboratories.[3.]

---

(1) The response rate from municipal laboratories is misleading in that some county and regional laboratories serve the nearby cities.

(2) Three federal laboratory systems serve nation-wide

(3) The laboratories located on the map (by LEAA Regions) represented those that provided quantitative information concerning their operations.
Because many of them represented Satellites which operated under the same policies as the parent laboratory, 111 laboratories represented the respondent population on all "Policy" questions in this study.

2. QUESTION:

Is the laboratory part of a satellite system?
☐ Yes ☐ No

Response:

- Satellite systems reported:

3	Federal
11	State
1	County

Finding:

- There has been a significant increase in state satellite systems in recent years.

3. QUESTION:

By whom are you *normally* funded? (Include funds for personnel, operations, capital improvement, teaching, research, etc.)

Funding Agency	Fund Use	% of Total Available Funds

Response:

- 24 State laboratories reported. Most were funded by the state legislature. 33% reported receiving financial support from LEAA ranging from 2% to 20% of their budget.

  19 County laboratories reported. Of these 6 received outside support.

  12 City laboratories reported. 3 of these received outside support.

  2 Independent laboratories reported being funded by member cities.

- Other funding data was considered to be invalid because of inconsistencies in reporting procedure. Consequently, a study of personnel funding patterns was not possible.

Finding:

- Judging by the paucity of management data provided by the laboratories it is evident that one or more of the following conditions prevail:
  1) The data requested is not collected by the laboratory.
  2) It is not readily available.
  3) The laboratories were reluctant to reveal the data.

4. QUESTION: **Does the head of the laboratory perform any of the following administrative/managerial duties — for the various budgets indicated? (Check all appropriate)**

	For Personnel Budgets/Ceilings	For Operating Budgets	For Capital Funds
Design & Plan Budgets	☐	☐	☐
Submit & Defend Budgets	☐	☐	☐
Receive Allocations	☐	☐	☐
Responsible for Expenditures	☐	☐	☐

Response:

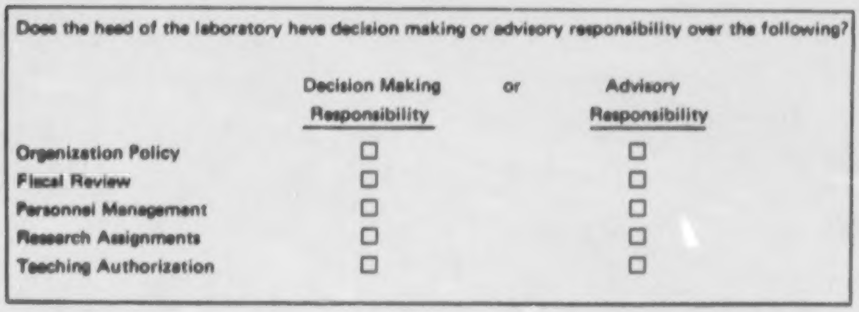
- The heads of the laboratories had budgetary responsibility as follows:

	Personnel Budget	Operating Budget	Capital Funds
Plan	46	53	50
Defend	47	53	42
Receive Allocation	34	41	32
Expenditure Responsibility	43	51	43

Finding:

- The reduced involvement of laboratory directors in the category "Receive Allocations" for personnel is consistent with a centralized pay system.

5. QUESTION:



Does the head of the laboratory have decision making or advisory responsibility over the following?

	Decision Making Responsibility	or	Advisory Responsibility
Organization Policy	☐		☐
Fiscal Review	☐		☐
Personnel Management	☐		☐
Research Assignments	☐		☐
Teaching Authorization	☐		☐

Response:

- The laboratory heads' decision making and advisory responsibility were reported as follows:

	Decisions	Advising
Organization policy	36	37
Fiscal review	28	39
Personnel management	62	23
Research assignments	46	21
Teaching authorization	45	27

Finding:

- Heads of laboratories are most often responsible for personnel management matters and relatively less responsible for decision-making concerning fiscal review.

POSITION	SALARY RANGE				
	7,500-9,999	10,000-12,499	12,500-14,999	15,000-19,999	20,000+
Lab. Director		1	2	11	13
Asst. Director				2	2
Supervisor			7	6	1
Chief Forensic Chemist			1	2	1
Chemist I	1	6	5	1	
Chemist II			4	1	
Chemist III			1	4	
Criminalist I		15	16	1	
Criminalist II		1	12	5	
Criminalist III		1		11	2
Criminalist IV				2	1
Chief Lab. Technician			1		
Lab. Technician	7	3	4		
Lab. Technician II	1	-	-		
Evidence Technician	5	1	-		
Document Examiner	1	1	3	3	
I. D. Technician IV	-	1			
I. D. Technician III	-	1			
I. D. Technician II	1	-			
Fire Arms/Tool Mark Exam.		2			

TABLE V-1

FREQUENCY DISTRIBUTION OF AVERAGE SALARIES

REPORTED BY RESPONDENT LABORATORIES

6. QUESTION: Please complete the following manning table.

Laboratory Position Title	Strength				Salary Range	
	Authorized		Actual			
	Permanent	Temporary	Permanent	Temporary	Min. $	Max. $

Response:

- The frequency distribution of laboratories, by strength, is as follows:

Authorized Strength	Number Laboratories Responding	Nr. Laboratories in CLIS Survey, 1974
1 to 5	18	48
6 to 10	17	33
11 to 20	10	34
21 to 30	11	16
31 to 40	5	9
41 to 50+	3	18

- The frequency distribution of average salaries is shown at Table V-1.

- The distribution of salaries in excess of $20,000 for the 13 responding laboratory directors is as follows:

Number of Directors	Salary Range
9	$20,000--24,999
2	$25,000--29,999
2	$30,000--35,000

7. QUESTION:

How many newly authorized laboratory positions have been created in your organization in the past four years? How many do you realistically anticipate creating in the next three years?

Newly Authorized Laboratory Position Titles	Actual				Anticipated		
	'71	'72	'73	'74	'75	'76	'77

Response:

- Newly Authorized Positions

Laboratory Size (Strength)	Actual 1971-1974	Anticipated 1975-1977
1 - 5	29	23
6 - 10	39	70
11 - 20	75	32
21 - 30	81	66
31 - 40	37	12
41 - 50+	56	10
	317	213

- Of the 317 newly authorized positions and 213 anticipated positions the following is the specialty distribution:

Specialty	Authorized	Anticipated
Chemist	124	62
Criminalist	78	80
Evidence Technician	14	18
Lab. Technician	14	20
Firearms Analyst	8	2
Questioned Document Examiner	3	7
Photographer	7	1
Polygraph	3	0
Lab. Director	3	0

Response Analysis:

- The laboratories reported a total of 25 current vacancies (as of early 1975).
- Of these 25 vacancies, 22 were the result of unfilled newly authorized positions.

Findings:

- The laboratories experienced an approximately 13% personnel growth rate over the four-year period ending in 1974. Most of this growth is concentrated in the staffing of satellite laboratories.
- The anticipated growth rate for the next three-year period ending in 1977 is 8%.
- The use of the title "Criminalist" is growing in popularity. (For a study of criminalist job descriptions see Chapter IV: Criminalist, Individuals.)

8. QUESTION:

> On an annual basis, what is the average number of analyst (examiner) positions vacated in your agency because of transfers, resignations, dismissals, and deaths? (Do not include those created because of newly authorized positions.) [Circle one]
>
> 1 2 3 4 5 6 7 8 9 10 or more

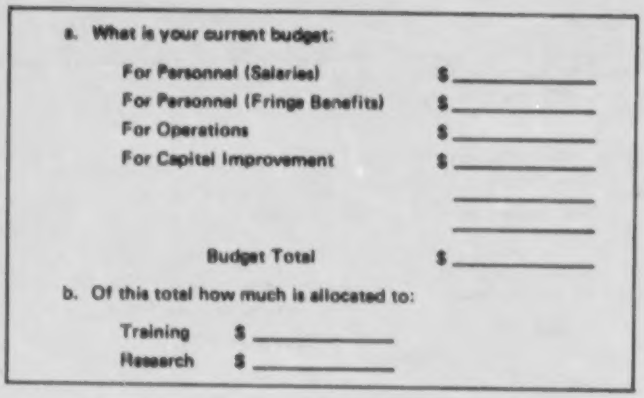
Response:

- On the average, one position vacancy was created at an agency each year because of transfer, resignation, dismissal or death.

Finding:

- The forensic science laboratories have a remarkably stable labor force.

9. QUESTION:



a. What is your current budget:

For Personnel (Salaries) $ ________

For Personnel (Fringe Benefits) $ ________

For Operations $ ________

For Capital Improvement $ ________

____

____

Budget Total $ ________

b. Of this total how much is allocated to:

Training $ ________

Research $ ________

Response:

- The total budgets were distributed as follows:

23	under		$100,000
3	$100,000	to	$200,000
9	$200,000	to	$300,000
0	$300,000	to	$400,000
2	$400,000	to	$500,000
3	$500,000	to	$600,000
8	$600,000	to	$700,000
3	Over		$700,000

- Insufficient data was provided regarding details of the budget.
- Forty-nine per cent reported training allocations.
- Only nine per cent reported any research allocation, and these were generally very small.

Finding:

- There is a noticeable lack of budget planning and allocation devoted exclusively to research. This is augmented by other data which showed that few, if any, research positions were authorized in U.S.A. laboratories.

10. QUESTION: ***Approximately*** **how much floor space (in square feet) is occupied by your laboratory for the following activities?**

Reception area ____
Evidence receiving area ____
Evidence storage ____
Storage of laboratory current reagents ____
Bulk storage for laboratory expendibles (supplies) ____
Seperate secure area for narcotics storage ____
Outside ventilated storage for bulk supplies of acid, solvents, and gases ____
Photographic negative development ____
Photographic print making ____
Latent fingerprint examination area ____
Vehicle examination area ____
Library ____
Conference room ____
Administrative area ____
Mechanical shop ____
Blood alcohol analysis ____
Narcotics and dangerous drugs analysis ____
Forensic toxicology analysis ____
Forensic serology & immunohematology ____
Photomicrography ____
Radiography ____
Test firing in standards ____
Test firing, horizontal backstop ____
Demonstrative exhibit ____
Office for director ____
Office for supervisors ____

Response:

- Floor space (in square feet) was allocated as follows:

Use	Minimum	Average	Maximum
Reception	0	120	600
Evidence receiving	10	120	700
Evidence storage	20	175	2000
Current reagents	0	100	500
Bulk expendibles	0	110	500
Narcotics secure area	0	75	290
Ventilated storage	0	40	200
Blood alcohol analysis	0	100	350
Narcotics analysis	20	250	1800
Forensic Toxicology analysis	0	125	300
Forensic serology	0	140	450
Photomicrography	0	100	180
Radiography	0	20	180
Test firing in standards	0	110	170
Test firing - backstop	0	120	600
Photo negative development	15	120	400
Photo print making	0	130	800
Latent fingerprint examination	16	140	400
Vehicle examination	0	120	1600
Library	0	80	450
Conference Room	0	125	600
Administrative	10	125	900
Mechanical shop	0	75	400
Exhibit	0	30	200
Director	0	100	336
Supervisors	0	90	600

Response Analysis:

- This question, per se, is not a personnel-related question. It was included to provide a basis for studies of how to satisfy the most common complaint of the respondents -- the need for more space. (See Question 24.)

11. QUESTION:

Do you have the following types of equipment? And is the quantity/quality adequate?

	Do not have	Have	
		Adequate	Inadequate
Microscopes	☐	☐	☐
Spectrophotometers	☐	☐	☐
Chromatagraphs	☐	☐	☐
Balances	☐	☐	☐
Cameras and enlargers	☐	☐	☐
Shop tools	☐	☐	☐

Response:

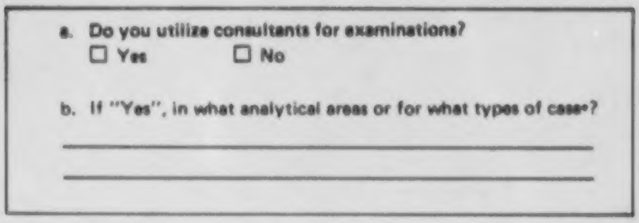
-

	Do Not Have	Have	
		Adequate	Inadequate
Microscope	0	50	13
Spectrophotometers	5	46	11
Chromatagraphs	4	44	13
Balances	1	55	7
Cameras/Enlargers	6	42	14
Shop tools	6	30	22

Finding:

- Approximately 25% of the respondents either did not have necessary equipment or were dissatisfied with it in quantity or quality.

12. QUESTION:



a. Do you utilize consultants for examinations?
☐ Yes ☐ No

b. If "Yes", in what analytical areas or for what types of cases?

____

____

Response:

- 30 Yes

  40 No

- Of those who responded "Yes" the following are analytical areas cited:

  Narcotics & Dangerous Drugs
  Questioned Documents
  Pathology
  Odontology
  Firearms
  Trace Evidence

Finding:

- Quite logically, many smaller laboratories use consultants to augment the laboratory staff, paying them on a fee-for-service basis.

13. QUESTION:

If you perform laboratory work for other agencies, in what analytical areas or for what types of cases? ________________

____

____

Response:

-

Respondents	Areas
12	All categories
9	Drugs
6	Questioned Documents
5	Fingerprints
26	Others

14. QUESTION:

If your laboratory conducts research, please indicate the types of projects.

Past Projects: ______________________

____

Response:

- 72% of the laboratories do not perform research beyond that necessary to solve a current case.
- Of those who do perform research the following projects were cited:

    Drug analysis
    Serology
    Neutron activation analysis
    Firearms Residue
    Electrophoretic Technique
    Blood
    Glass
    Hair & Fiber
    Automatic Analyzer
      (Blood and Alcohol)

Finding:

- Most laboratories do not have time to engage in research, per se.

15. QUESTION: **Do you have minimum *entry* qualifications for your laboratory analysts (examiners)? If so, please indicate. (Check all appropriate)**

a. Personal Qualifications
- ☐ Age
- ☐ Sex
- ☐ Race
- ☐ Height
- ☐ Weight
- ☐ Eyesight
- ☐ Citizenship
- ☐ Background Investig.
- ☐ Place of Residence
- ☐ Other (Specify) ____

b. Testing
- ☐ Proficiency ________ Type
- ☐ Dexterity
- ☐ Intelligence
- ☐ Phychological
- ☐ Other ________

c. Yrs. of Experience (Circle one)

1 2 3 4 5 6 7 8 9 10

d. Professional
- ☐ Certification ________ (By Whom)

e. Education
- ☐ High School
- ☐ College (Less than 4 years)
- ☐ College (Bachelors)
- ☐ Graduate School
- ☐ Specialty Courses
- ☐ Other (Specify) ________

Response:

- a. Minimum entry qualifications

Number Responses	Personal Qualifications
30	Age
1	Sex
0	Race
10	Height
11	Weight
30	Eyesight
60	Citizenship
104	Background Investigation
19	Place of Residence

- b. Testing

16	Proficiency
13	Dexterity
15	Intelligence
7	Psychological

- c. Less than twenty-five per cent reported that experience qualifications were required.

- d. Four laboratories require some form of professional certification. Two require certification by the American Chemical Society and two require State Public Health certification.

- e. The education levels required were:

2	High school
19	College (no degree)
85	Bachelor degree
5	Graduate school

Finding:

- A significant number of laboratories now require a bachelor degree as a minimum entry qualification. Some require demonstrated proficiency in addition to education.

16. QUESTION: What are the minimum education, training, and experience standards for promotion in your laboratory?

Response:

- Promotion was, in most cases, dependent on length of service.

Finding:

- Most laboratories do not have a "merit" system of evaluation for promotion. Very few cited any specific standards for promotion.

17. QUESTION:

If you also have minimum standards for your technical support level personnel please list.

Response:

- Very few laboratories cited any standards for technical support personnel. Those who did indicated that the technical support personnel represented a potential labor pool for the professional ranks.

Finding:

- Laboratories do not have established qualification standards for technical support personnel.

18. QUESTION:

a. What is the *minimum* age and qualification for retirement from your laboratory (not including disability)?

Minimum Age: ____________

Minimum Length of Service: ____________

Other (Specify) ____________

b. Do you have a mandatory age for retirement?

☐ Yes ☐ No

Age ____________

Response:

- The lowest minimum age qualifying for retirement was forty-five while the average minimum qualification age was just over fifty-five.

- The average required length of service for retirement was slightly over twenty years.

- The majority of the laboratories stated that they have a mandatory age for retirement. The distribution is as follows:

% Responding	Mandatory Age
6%	55 - 60
20%	60
55%	65
15%	70
4%	Other

Finding:

- The average mandatory retirement age within the criminalistics profession has a favorable impact on the promotion ladder system.

19. QUESTION:

Which of the following benefits are offered to your laboratory employees?

☐ Vacation ________ (Days or weeks per year)
☐ Holidays ________ (Number of days per year)
☐ Sick leave
☐ Hospitalization ________ (Number of days per year)
☐ Major Medical
☐ Accident Insurance
☐ Life Insurance
☐ Professional Meetings (Describe) ________
☐ Dues paid to Professional Organizations

Response:

- The distribution of holidays is as follows:

Percent of Total Nr. Responding	Nr. of Days
11%	8 days
22%	9 days
13%	10 days
27%	11 days
5%	12 days
3%	13 days
5%	14+days
14%	Others

- The distribution of sick leave days per year is as follows:

Total % of Nr. Responding	Sick Leave Days Per Year
3%	11 days
30%	12 days
22%	13 days
1%	14 days
6%	15 days
14%	16+days
18%	Others

- Other benefits are available as follows:

98	Hospitalization
80	Major Medical
72	Accident Insurance
87	Life Insurance
83	Professional Meetings
45	Professional Dues

Findings:

- The only discernable difference in benefits between sworn personnel and civilians exists in those agencies where sworn personnel have no upper limit to the number of days of authorized sick leave. In those cases, the civilians were generally limited to a specific number of days.
- The recently imposed restriction by most agencies on attendance at professional meetings is not reflected in the above data.
- With the possible exception of professional meetings and dues, the benefits extended to criminalistics personnel are the same as those enjoyed by all other personnel within a particular governmental entity.

20. QUESTION:

Do you provide any of the following to your employees?

☐ Car
☐ Car Allowance
☐ Overtime Pay
☐ High Hazard Pay
☐ Shift Differential

Response:

% of Total Nr. Responses	Benefit
45%	Car
36%	Car Allowance
50%	Overtime Pay
14%	High Hazard Pay
14%	Shift Differential

21. QUESTION:

a. Do you provide an educational allowance for laboratory personnel taking courses outside of your agency?

☐ Yes ☐ No

b. If "Yes", is this allowance in the form of: (Check all appropriate)

☐ Tuition Support
☐ Text Book Support
☐ Time Off
☐ Other (Specify) ____________

Response:

- a. Percent of total responding who provide educational allowance:

68%	Yes
32%	No

- b. Of those who answered "Yes" the following is the distribution of allowances:

% of Total Nr. Responding	Allowance
64%	Tuition Support
31%	Textbook Support
34%	Time off

Finding:

- The fact that 2/3 of the laboratories offer educational allowances is encouraging.

22. QUESTION:

a. Do you conduct on-the-job training for your laboratory personnel?

☐ Yes ☐ No

b. If "Yes", is the training formalized to include outlines and reading assignments?

☐ Yes ☐ No

Response:

- a. Conduct on-the-job training?

103	Yes
4	No

- b. Formalized?

57	Yes
39	No

Response Analysis:

- Further query revealed that about 30% of the laboratories with formalized O-J-T were unable to provide copies of their program.

Finding:

- Most laboratories conduct on-the-job training but at least 60% of them do not have a formal O-J-T program (outlines, reading assignments, etc.)

23. QUESTION:

Do you provide education and training for individuals and agencies other than your own?

☐ Yes ☐ No

Response:

- 62 Yes

  41 No

Finding:

- Slightly over 60 percent of the agencies provide training for individuals from outside the agency.

24. QUESTION:

> If the means were available, what improvements would you make in your laboratory in the following areas? (Please show one improvement per area)
>
> Physical Facilities: ______________________________
>
> Instruments and Equipment: ______________________________
>
> Expendibles: ______________________________
>
> Personnel Matters: ______________________________

Response:

- Physical Facilities:

45	More Space
5	New Facilities

- Instruments and Equipment:

20	Gas Chromotagraph & Mass. Spec.
12	Atomic Absorption
8	X-Ray Fluorescence
6	S.E.M.
6	More Equipment

- Expendibles:

10	More Expendibles

- Personnel Matters:

31	More Personnel
5	Firearms Examiner
4	Chemist
3	Criminalist
13	Higher Salaries
3	Travel Reimbursement

Findings:

- The most universal need of criminalistics laboratories is for more space.
- The next most common need is for more personnel.

25. QUESTION: In what areas would you like to conduct research in your laboratory?

Response:

- Common areas of recommended research (in order of frequency) were:
    - Blood groupings and I.D.
    - Discharge residues
    - Paint
    - Serology
    - Hair, general
    - Glass
    - SEM
    - Soil
    - Individualization, general (paint, soil, glass, hair, tar, safe insulation, etc.)
    - Drug analysis
    - Tagging ammunition/weapons

26. QUESTION: **In your opinion, what are the significant problem areas facing the criminalistics profession?**

Response:

- Common significant problems reported were as follows:
  - Budget matters - more money
  - Lack of properly trained and qualified personnel
  - Need for continuing education
  - Need for standards, certification, licensure
  - Proficiency testing of laboratories
  - Lack of data bank/computerized information
  - Underutilization
  - Proving the value of specific examinations to the justice system
  - Need for standards of performance, method, shelf items
  - Lack of communications - up, down, laterally
  - Need for research personnel, funds, space, time

CHAPTER VI

FORENSIC ANTHROPOLOGY

DEFINITION

The Forensic Anthropologist is a physical anthropologist who, through special education, is involved in the identification of skeletal or other human remains where the remains cannot be identified by such means as recognition, fingerprints, etc. He examines such evidence to determine sex, age, and approximate height at the time of death, and racial affinities where possible. He provides this service for coroners and medical examiners and other law enforcement agencies in civil and criminal cases. He is also used by the Armed Forces in the identification of war dead. He is normally a member of a university faculty or holds a curatorial position in a museum or is a consultant in the scientific study of the origin, culture, and development of man.

SURVEY BACKGROUND

The material to follow is the product of a survey taken in 1974-1975. The questionnaire was mailed to the membership of the American Association of Physical Anthropologists, plus the members of the Physical Anthropology Section of the American Academy of Forensic Sciences. Responses are as follows:

Questionnaires Mailed	Responses	Per cent Response
170	40	24%

Further evaluation of the qualifications of the 40 respondents indicates that this is at least a representative sample of the target population -- if not a near census.

FINDINGS

- The vast majority of forensic anthropologists are on university staffs as salaried employees in areas other than forensic anthropology. They are predominately male with advanced degrees. Their mean age is 41. A third have less than five years of experience and over half have less than 10 years of experience as forensic anthropologists.
- Those who are affiliated with museums are also male, with advanced degrees. They are older than their university comtemporaries and have more years of experience as forensic anthropologists.
- Viewing the justice system as a sequencing system (law enforcement and coroner/ME activities; prosecution/defense; courts; corrections), the forensic anthropologist more often relates to decision makers in the early stages of the system and progressively less with each succeeding stage (zero with corrections).
- Forensic anthropologists are prosecution oriented, primarily because of the nature of their involvement in cases.
- Forensic anthropologists are relatively unknown within the justice system -- both as to general qualifications and as to potential service support.
- Lists of currently qualified forensic anthropologists are not distributed to potential users of their service.

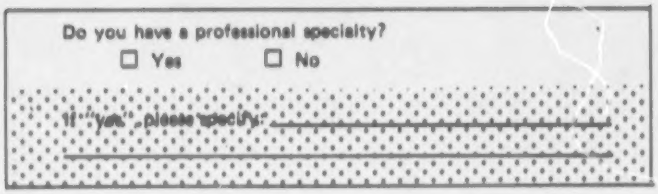
- The education and training opportunities in subjects germane to forensic anthropology are meager.
- There is a lack of awareness among many respondents of the research being performed in this and related fields.
- Most forensic anthropologists have not supported their profession through publication dealing directly with the field.
- There appear to be no standards for the basic minimum facility and equipment needs of a forensic anthropologist.

RECOMMENDATIONS

- An annual list of qualified forensic anthropologists should be widely distributed to law enforcement agencies, attorneys, and judicial bodies.
- Various types of continuing education for forensic anthropologists are urgently needed.
- Research is needed to improve methods for the determination of age - sex - ethnic origin and time since death.
- An intradisciplinary communication link (such as a newsletter) is needed to keep the profession abreast of current education and research activities in forensic anthropology and related fields.
- Standardization is needed within the profession to provide the minimum facility and equipment needs of the forensic anthropologist.
- Familiarization and orientation courses are needed for those elements of the justice system that relate to or use forensic anthropological services.

SURVEY RESULTS

1. QUESTION:



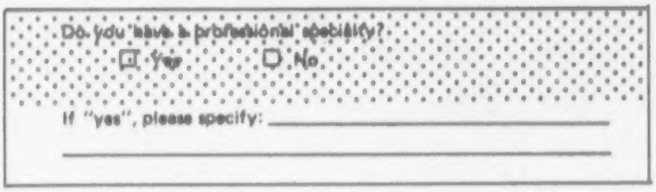
Do you have a professional specialty?

☐ Yes ☐ No

If "yes", please specify: ____________

Response:

- 39 Yes
  1 No



Do you have a professional specialty?

☐ Yes ☐ No

If "yes", please specify: ____________

Response:

- 22 Physical Anthropologists
  6 Osteologists
  2 Forensic Anthropologists
  9 Miscellaneous

Response Analysis:

- Further analysis showed that 35 of the 40 respondents should be categorized as physical anthropologists -- including those who indicated that they are osteologists.
- Although only two respondents listed themselves as forensic anthropologists, further evaluation of subsequent questions indicates that all respondents have had some experience in forensic anthropology.

Findings:

- The unique prerequisites for a forensic scientist are not widely known among physical anthropologists who are not active in Forensic work.

2. QUESTION:

Please provide information regarding past work in Forensic Anthropology:

Position or Case Description	Year

Response:

- Only six respondents have, at sometime, held an appointment in forensic anthropology.
- Of the six, only three have held full time positions in forensic anthropology, each for only a few years.
- 32 respondents are currently employed by universities, of which 22 hold positions in the Department of Anthropology.
- Five respondents are currently employed by museums. (Some respondents indicated more than one position).

Response Analysis:

- Table VI-1 , Employment of Forensic Anthropologists, gives a further study of the respondents.

Findings:

- The vast majority of forensic anthropologists are on university staffs as salaried employees. They are predominately male with advanced degrees. Their mean age is 41. A third have less than five years of experience and over half have less than 10 years of experience as forensic anthropologists.

TABLE VI-1

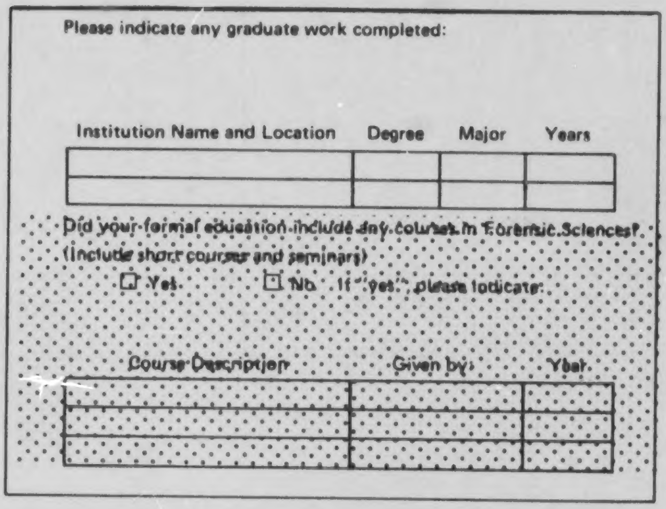
EMPLOYMENT OF FORENSIC ANTHROPOLOGISTS
(Profile)

Employment	No.	Sex		Education			Prof. Society				Age						Yrs. of Experience				
				Under Grad.	B/A B/S	Post Grad.	AAPA	AAFS	OTHER	NO RESPONSE	-20	21-30	31-40	41-50	51-65	65+	1-5	6-10	11-20	21-30	30+
University Dept. of Anthropology: 26 Other: 6	32	26	6	1	0	30	21	12	7	10	0	4	14	8	5	2	13	0	7	3	2
Museum	5	5	0	0	0	5	2	1	3	2	0	0	0	2	3	1	0	1	1	1	1
Total	37*	31	6	1	0	35	23	13	10	12	0	4	14	10	8	3	13	11	8	4	3

* Three respondents were employed outside the two cited areas.

- Those who are affiliated with museums are also male, with advanced degrees. They are older than their university comtemporaries and have more years of experience as forensic anthropologists.

3. QUESTION:



Please indicate any graduate work completed:

Institution Name and Location	Degree	Major	Years

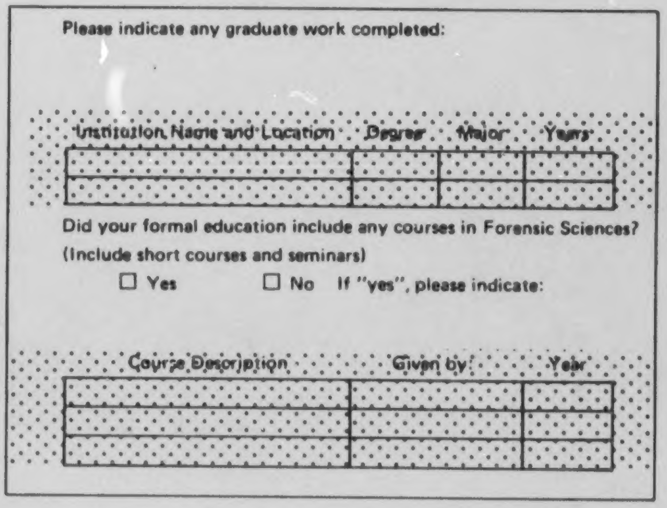
Did your formal education include any courses in Forensic Sciences? (Include short courses and seminars)

☐ Yes ☐ No If "yes", please indicate:

Course Description	Given by:	Year

Response:

- 37 of the respondents have earned their Ph.D. degree.



Please indicate any graduate work completed:

Institution Name and Location	Degree	Major	Years

Did your formal education include any courses in Forensic Sciences? (Include short courses and seminars)

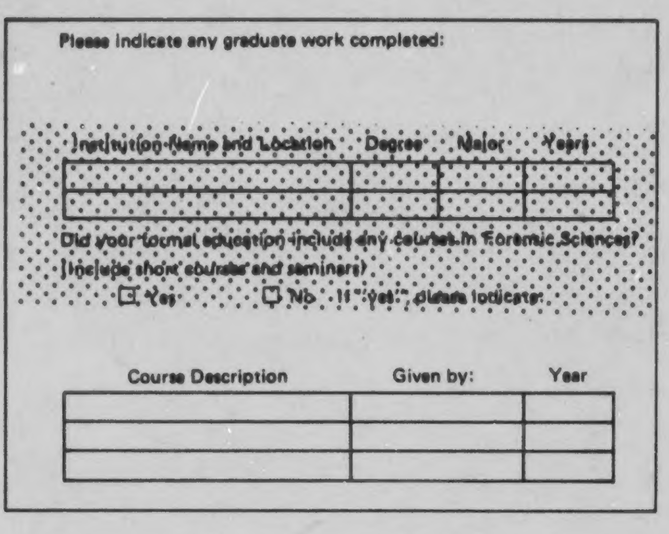
☐ Yes ☐ No If "yes", please indicate:

Course Description	Given by:	Year

Response:

- 12 Yes

  28 No



Please indicate any graduate work completed:

Institution Name and Location	Degree	Major	Year

Did your formal education include any courses in Forensic Sciences? (Include short courses and seminars)

☐ Yes ☐ No If "yes", please indicate:

Course Description	Given by:	Year

Response:

- Courses were described as: short courses; seminars; workshops.
- Courses were taken at various universities: University of Arizona; University of California, Berkeley; University of Colorado; Harvard; University of Kansas; University of Michigan.
- Scientific papers were heard at the annual meetings of the American Association of Physical Anthropology or the American Academy of Forensic Sciences.
- The Armed Forces Institute of Pathology Courses were cited as being among those that expand the forensic expertise of the profession.
- The following courses were cited as contributing to the advancement of the respondents' expertise in forensic anthropology:

  Bioanthropology Laboratory by Newman

  Advanced Physical Anthropology by Kerley

  Physical Anthropology Laboratory by Baker & McKown

  Forensic Medicine by Bass

cont...

Paleopathology by Kerley

Skeletal Identification by Snow

Seminar by Krogman

AFIP Courses by L. Johnson, Stradford, F.D. Johnson

Findings:

- The education and training opportunities in subjects germane to forensic anthropology are meager.

4. QUESTION:

Would you please provide an overall evaluation of your Forensic education and training:

	Excellent	Good	Average	Poor
Formal Education	☐	☐	☐	☐
On-job-training	☐	☐	☐	☐
Continuing Education	☐	☐	☐	☐
Seminars/Workshops	☐	☐	☐	☐

Response:

	Excellent	Good	Average	Poor
Formal	6	12	3	7
On-the-job training	10	12	2	2
Continuing education	7	8	5	3
Seminars/workshops	3	7	4	5

Response Analysis:

- The responses are considered to be of questionable value since, in Question 7, only 12 individuals recorded having received formal education (short courses, seminars, etc) in forensic anthropology; yet, in the above tabulation, from 19 to 28 evaluations of that education were listed by the respondents.

5. **QUESTION:**

> What percentage of your time is devoted to Forensic Anthropology?
>
> ______ %

Response:

- 55% of the respondents devoted less than 05% of their time to forensic anthropology.
- An additional 26% (cumulative total-81%) devoted from 05% to 09% of their time to forensic anthropology.
- A cumulative 91% devoted less than 20% of their time to forensic anthropology.

Findings:

- Forensic anthropologists spend the bulk of their time on pursuits other than forensic anthropology.

6. **QUESTION:**

> List any of your publications (in Forensic Anthropology) for the years 1972-74 that you consider significant. Include journal, title, volume and date.
>
> ______________________________
>
> ______________________________

Response:

- 25 indicated no publications in forensic anthropology.
- Only four listed two or more publications on forensic anthropological subjects.

Findings:

- Forensic anthropologists have not supported their profession adequately through publications.

7. QUESTION:

List any of your memberships in professional organizations, licenses, certification, etc., relevent to Forensic Anthropology:

____

____

Response:

- 23 American Association of Physical Anthropologists

  13 American Academy of Forensic Sciences

  10 Others

  (Some respondents indicated more than one affiliation).

- 12 Did not respond

8. QUESTION:

List any teaching positions or faculty appointments which pertain to Forensic Anthropology:

1. ________________________________

2. ________________________________

3. ________________________________

Response:

- 19 respondents listed teaching positions.

  2 additional respondents stated that they are lecturers.

9. QUESTION:

Please provide the name of the agency or agencies for whom you do any Forensic Anthropology.

____

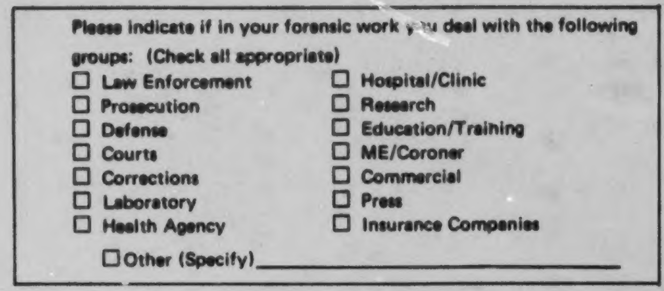
Response:

14	Coroner/Medical Examiner's office	4	FBI
12	Sheriff's office	7	Miscellaneous
11	Police department	8	No response
6	Armed forces		

Findings:

- The results are corroborated by findings made in Question 10.

10. QUESTION:



Please indicate if in your forensic work you deal with the following groups: (Check all appropriate)

☐ Law Enforcement
☐ Prosecution
☐ Defense
☐ Courts
☐ Corrections
☐ Laboratory
☐ Health Agency
☐ Hospital/Clinic
☐ Research
☐ Education/Training
☐ ME/Coroner
☐ Commercial
☐ Press
☐ Insurance Companies
☐ Other (Specify)____________________

Response:

24	Law Enforcement	1	Hospital
12	Prosecution	10	Research
2	Defense	18	Education
7	Courts	20	Medical Examiner/Coroner
0	Corrections	1	Commercial
11	Laboratory	4	Press
1	Health Agency	1	Insurance Companies

Response Analysis:

- It is also evident from a study of the responses that the 11 who indicated that they dealt with laboratories in their forensic work were actually referring to research laboratories -- not criminalistic laboratories.

Findings:

- If the justice system is viewed as a sequencing system (law enforcement and coroner/medical examiner activities; prosecution/defense; courts; corrections) the forensic anthropologist more often relates to decision makers in the first stage of the system and progressively less with each succeeding (zero with corrections). This is corroborated by the results of Question 11 wherein a large number of the respondents give expert opinion (to law enforcement/coroner & medical examiner agencies) but few actually testify in court.

- Because of the nature of their involvement in cases, the forensic anthropologists are prosecution oriented.

11. QUESTION:

In what capacity do you serve as a Forensic Anthropologist? (Check all appropriate)

☐ Gather case evidence
☐ Analyze case evidence
☐ Testify or present evidence
☐ Give expert opinion
☐ Perform research in Forensic Anthropology
☐ Teach Forensic Anthropology

Response:

5	Gather case evidence	27	Give expert opinion
27	Analyze case evidence	14	Perform research
11	Testify or present evidence	19	Teach

Response Analysis:

- Further query of the respondents indicates that only 9 of the 14 who perform research actually do so in the field of forensic anthropology.
- Although 68% analyze case evidence and give expert opinion on their findings, only 28% actually do so in court.

12. QUESTION:

> What are the types of cases (in order of frequency) that you have handled? (e.g. mass disaster identification, human vs. animal bones, etc.)
>
> 1. ____________________________
> 2. ____________________________
> 3. ____________________________
> 4. ____________________________

Response:

26	Human identification (general identification or identification of single case).
22	Human vs. animal
4	Mass disaster
4	Archaeologic remains (utilizing methods used by forensic anthropologists in the identification of non-forensic material).

13. QUESTION:

> What percentage of your cases are criminal cases?
>
> _______%

Response:

Percent of cases are criminal cases	Number of Respondents
0- 9%	15
10-19%	2
20-29%	5
30-59%	4
60-69%	2
70-89%	2
90-99%	5

(Not all respondents answered this question)

14. **QUESTION:**

Approximately how many times have you testified as an expert witness in:

______ 1969 ______ 1972
______ 1970 ______ 1973
______ 1971 ______ 1974

Response:

-

Nr. times Testified	1969	1970	1971	1972	1973	1974
1	1	2	3	2	1	4
2	2	1	2	1	4	2
3 or More	0	0	1	1	1	0

- The vast majority had not testified in court since 1969.
- 18% failed to respond.

Findings:

- The forensic anthropologist literally does not go to court. Rather, he submits depositions or provides evidence which is used to substantiate the identification.

15. **QUESTION:**

The percentage of time you work for the defense is:
______ %
For the prosecution:
______ %

Response:

- Of those responding the overwhelming majority work exclusively for the prosecution.

16. QUESTION:

Do you feel that you can adequately convey your evidence to the court and/or jury?

☐ Yes ☐ No

If "no", how might this be corrected? ______________

Response:

- 22 Yes
  0 No
  2 Uncertain

Response Analysis:

- The significant datum is the fact that none felt that they could not adequately convey their evidence to the court. Obviously, many respondents answered this question based on court experiences outside the range of this study or were uncertain of their feelings or surmised that they would perform adequately.

17. QUESTION:

Are your meetings with counsel adequate to prepare you for court presentation?

☐ Yes ☐ No

If "no", how might this be improved? ______________

Response:

- 12 Yes
  0 No
  2 Uncertain

Response Analysis:

- Questions 14, 15, 16, 17 and 18, taken as an interlocked set of questions, picture the forensic anthropologist as a scientist who generally works for law enforcement agencies or coroner/medical examiner offices in skeletal identification. As such, he seldom appears in court, and seldom meets with counsel.

18. QUESTION:

What is the basis for your compensation received as a Forensic Anthropologist:

☐ **Fee for service**
☐ **Contract**
☐ **Volunteer**
☐ **Other (Specify)** ____________________

Response:

- 27 provide their service as volunteers.

  however

  10 of the volunteers accept a fee if it is available.

  and

  2 of the volunteers ask for expenses.

  1 is currently salaried as a forensic anthropologist.

19. QUESTION:

Have you personally been forced to turn down a request for your Forensic services?

☐ **Yes** ☐ **No**

If "yes", why? ____________________

Response:

- 1 Yes (not in his area of expertise).

  35 No

20. **QUESTION:**

Are the total number of individuals engaged in Forensic Anthropology in your immediate geographic area adequate to meet current needs?

☐ Yes ☐ No

Response:

- 16 Yes

  10 No

Response Analysis:

- The question proved to be a difficult one to answer. Although ten indicated that there were too few in their geographic area, none stated that he had been forced to turn down a case because of overwork (Question 19, above).
- An analysis of subjective comments made by the respondents indicates that there is no appreciable shortage of forensic anthropologists on the basis of current demand.
- Based on an analysis of subjective comments made by the respondent there could be future shortages in the following areas (as examples):

Northern New York

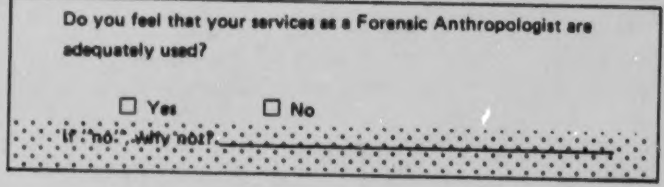
Northern California

Northeast Michigan

Parts of North Carolina, South Carolina and Georgia

Parts of Nevada

21. QUESTION:



Do you feel that your services as a Forensic Anthropologist are adequately used?

☐ Yes ☐ No

If "no", why not? ____________

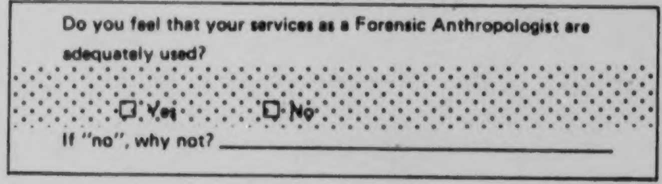
Response:

- 16 No

  15 Yes

Response Analysis:

- There appears to be a contradiction between this evenly divided answer and the responses to other question -- which imply that the respondents do not consider that their services as forensic anthropologists are adequately used.



Do you feel that your services as a Forensic Anthropologist are adequately used?

☐ Yes ☐ No

If "no", why not? ____________

Response:

- The most common reason given was "unawareness".
- Two answered that well qualified local forensic pathologists were used.

Findings:

- In conjunction with answers to preceding question, forensic anthropologists are relatively unknown... both as to capabilities and as to specific professionals to be contacted.

22. QUESTION:

What can be done to improve the understanding and utilization of Forensic Anthropologists by these groups? ____________

____

Response:

21	Communicate with the "users"
3	Educate and train the "users"
5	Miscellaneous
12	No suggestions

Response Analysis:

- Additional suggestions included:

  Lists of qualified (or certified) forensic anthropologists should be circulated.

  Forensic anthropologists should be utilized in the training of law enforcement officers and coroner/medical examiner personnel.

  Seminars and workshops should be conducted.

23. QUESTION:

What do you believe should be the minimum standards for education, training and experience for a Forensic Anthropologist?

____

Response:

- Education requirements (18 recommendations)

5	Ph.D. or M.D. (with additional education)
1	Ph.D. or M.D. or M.A. (with experience)
4	Ph.D.
3	Ph.D. or M.A.
5	M.A.

cont.

- Common Course Requirements (32 recommendations)
    - Physical Anthropology
    - Human Anatomy
    - Osteology
    - Histology
    - Human Growth and Development
    - Bone Identification
    - Muscle and Soft Tissue
    - Chemistry, Serology, Toxicology
    - Health and Disease
- Common Experience Requirements (14 recommendations)
    - Laboratory work in anthropology and anatomy
    - Field or museum work
    - Development of biological statistics
    - Medicolegal case analysis

24. QUESTION:

In what ways can the quality of work done by Forensic Anthropologists be improved?

____

____

Response:

- 21 respondents recommended better intradisciplinary communications.
- Specific recommendations included:
    - Seminars and Symposia
    - A newsletter devoted to new techniques
    - Cassette tape dialogue
- Other recommendations (a total of 5) related to education and training included:
    - Case work
    - A comprehensive test
    - Post-Graduate workshops
    - And specific courses in forensic anthropology in regular undergraduate and graduate curricula.

cont.

- Several recommended that funds be made available for initiation of improvement programs.

Findings:

- An intradisciplinary communications link is needed.
- Various types of continuing education activities are needed.
- Funds are needed for new education and training improvement programs and for research.

25. QUESTION:

In what areas of Forensic Anthropology is research most needed?

Response:

- The more common research recommendations included:

  The determination of age - sex - ethnic origin

  The establishment of time since death
- Many cited subjects were too general for the purpose intended in the questionnaire.

Findings:

- There is a lack of awareness among many respondents of the research being performed in this field and in related fields.
- Research is needed in improved methods for the determination of age - sex - ethnic origin and time since death.

26. QUESTION:

> **Are the facilities available to you adequate for your Forensic work?**
>
> ☐ Yes ☐ No

Response:

- 23 Yes
  9 No

27. QUESTION:

> **What additional facilities/equipment would you like to have?**
>
> ______________________________

Response:

- 6 Radiographic machine and accompanying developing darkroom.
  2 Better osteological collection of known specimens.
  2 Separate space for examinations.
  7 Miscellaneous items of equipment.

Response Analysis:

- Whereas most respondents indicated that their facilities were adequate, 15 cited equipment needs.
- Further query of the respondents indicated that basic facilities or equipment needs are undecided.

Findings:

- There appear to be no standards for the basic minimum facility and equipment needs of a forensic Anthropologist.

CHAPTER VII

FORENSIC ODONTOLOGY

DEFINITION

Forensic odontology is the branch of dentistry which deals with the proper handling and examination of dental evidence, and the proper evaluation and presentation of dental findings in the interest of justice. It deals with three major areas:

(1) The examination and evaluation of injuries to the teeth, jaws, and oral tissues.

(2) The examination of dental remains from unknown bodies or persons for possible identification of the individuals.

(3) The examination of bite marks for elimination or possible identification of a suspect as the originator.

The Forensic Odontologist is usually called upon by Medical Examiners, Coroners and Law Enforcement Agencies, on a consultant basis, to examine unidentifiable human remains and to give opinions on age, habits, relative economic status and geographic area,if dental treatment was rendered, and, in addition, numerous other clues useful in identification.

SURVEY BACKGROUND

The material to follow is the product of a survey taken in 1974-1975. The questionnaire was mailed to the membership of The American Society of Forensic Odontology and to the Odentology Section of The American Academy of Forensic Sciences.

Responses are as follows:

Questionnaire Mailed	Responses	% of Responses
245	95	39%

The level of response is considered to be, at least, a representative sample of the qualified forensic odontologists who examine forensic odontology evidence.

FINDINGS

- There appears to be no recognized specialty entitled forensic odontology.
- There is a paucity of educational opportunities in the field of forensic odontology.
- The forensic odontologist has published very little in the field in the last few years.
- The forensic odontologist is involved in all aspects of the justice system (police, prosecution, courts, corrections).
- Little thought has been given by the respondents to the matter of standards for forensic odontologists.
- There appears to be no established standard for basic equipment and facilities by forensic odontologists.
- The trend in the number of those testifying in court appears to be on the increase.

- Forensic odontologists are "prosecution" oriented.
- Forensic odontologists do not regularly make court appearances as a result of their forensic work.
- There appears to be no recognized compensation system for forensic odontology.
- Most forensic odontologists handle any request that is made of them.
- There is a general unawareness on the part of the potential consumer of forensic odontological work of the services that can be performed by the profession.
- Research in the areas of "bite marks", a standardized dental recording system, and a universal computerized record system are needed. Standard reference materials are also needed.

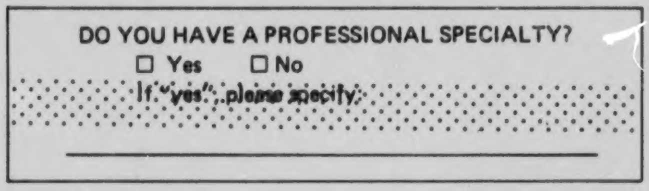
RECOMMENDATIONS

- Educational opportunities in degreed programs in forensic odontology should be encouraged. As a minimum, model "elective" subjects should be developed.
- A formal, systematic program of continuing education is urgently needed.
- Standards and an accompanying certification program are needed.
- Research in a standard dental record system is needed. A universal computerized data system is needed as are standard reference material. Bite mark research should be performed.

- An intradisciplinary communication link (newsletter, seminars, etc.) is needed to keep the profession abreast of the current state-of-the-art, and of education and research activities in forensic odontology.
- A liaison program should be instituted with law enforcement agencies and societies on a local state and national basis.
- An annual list of qualified forensic odontologists should be widely distributed to law enforcement agencies, trial lawyers and judicial bodies.
- Familiarization and orientation courses are needed for those elements of the justice system that relate to or use the forensic odontologist's services.

SURVEY RESULTS

1. QUESTION:



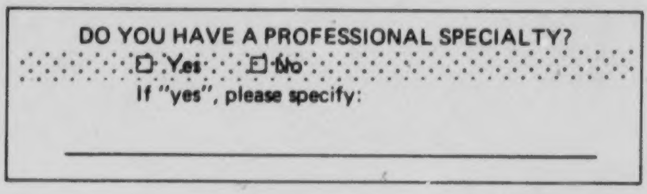
DO YOU HAVE A PROFESSIONAL SPECIALTY?
☐ Yes ☐ No
If "yes", please specify:

Response:

- 48 Yes

  39 No

  8 Did not respond to question



DO YOU HAVE A PROFESSIONAL SPECIALTY?
☐ Yes ☐ No
If "yes", please specify:

Response:

- The number of responses to the more common specialties cited were:

13	Oral pathology	2	Endodontics
13	General dentistry	2	Orthodontics
5	Oral surgery	2	Oral diagnosis & radiology

Response Analysis:

- None of the cited specialties are forensic odontology, per se.

Findings:

- There appears to be no recognized professional specialty entitled forensic odontology.

2. **QUESTION:** **PLEASE PROVIDE INFORMATION REGARDING PAST WORK IN FORENSIC ODONTOLOGY:**

Position or Case Description	**Year**

Response:

Number of Responses	Position or Case Description
71	Individual Human Identification
17	Mass Disasters, Victim Identification
8	Lecturer, etc
5	Bite Marks
36	No past work indicated

Response Analysis:

- Subsequent analysis of responses indicated that those who cited no past work, nevertheless, consider themselves to be qualified forensic odontologists by virtue of specialized education or training.
- Although no respondents listed forensic odontology as a specialty there is significant activity in this field in terms of individual casework.

3. **QUESTION:** **DID YOUR FORMAL EDUCATION INCLUDE ANY COURSES IN FORENSIC SCIENCES? (Include Post-Graduate short courses and seminars)**

☐ Yes ☐ No If "yes", please indicate:

Response:

- 80% Yes

  20% No

- 62 indicated having attended forensic courses at the Armed

Forces Institute of Pathology.

- This is approximately the same response as given to the survey taken in 1972 by the American Academy of Oral Pathology.

Findings:

- There is a paucity of educational opportunities in the field of forensic odontology.

4. **QUESTION:**

WOULD YOU PLEASE PROVIDE AN OVERALL EVALUATION OF YOUR FORENSIC EDUCATION AND TRAINING BEYOND DDS:

	Excellent	Good	Average	Poor
Formal Education	☐	☐	☐	☐
On-job-training	☐	☐	☐	☐
Continuing Education	☐	☐	☐	☐
Seminars/Workshops	☐	☐	☐	☐

Response:

-

	Excellent	Good	Average	Poor
Formal Education	25	14	10	20
On-the-job Training	20	16	10	15
Continuing Education	27	26	11	12
Seminars/Workshops	24	22	8	14

Response Analysis:

- Further query indicates that the respondents were equally divided in their opinion as to whether or not their educational courses at AFIP, etc were "formal education", "continuing education", or "seminars".

5. **QUESTION:**

WHAT PERCENTAGE OF YOUR TIME IS DEVOTED TO FORENSIC ODONTOLOGY?

______%

Response:

% time devoted	% Response
0- 9%	80% of respondents
10-19%	08% of respondents
20-29%	07% of respondents
30-59%	03% of respondents
60-99%	02% of respondents

- On the average, the respondents devoted 10% of their time to forensic odontology.

6. **QUESTION:**

LIST ANY OF YOUR PUBLICATIONS (IN FORENSIC ODONTOLOGY) FOR THE YEARS 1972-74 THAT YOU CONSIDER SIGNIFICANT. INCLUDE JOURNAL, TITLE, VOLUME AND DATE.

Response:

- 21 reported having published articles, etc in the field of forensic odontology.

  10 reported one publication

  5 reported two to four publications

  6 reported six or more publications

Findings:

- Forensic odontologists have published very little in the field in the last few years. This is borne out by the AAOP survey taken in 1969 where only 11% of the Fellows and 6%

of the Members had published at least one article in forensic odontology.

7. **QUESTION:** **LIST ANY OF YOUR MEMBERSHIPS IN PROFESSIONAL ORGANIZATIONS, LICENSES, CERTIFICATION, ETC., RELEVANT TO FORENSIC ODONTOLOGY.**

Response:

-

Number of Responses	Memberships
51	American Society For Forensic Odontology
15	American Academy Forensic Sciences
12	American Academy of Oral Pathology
6	American Dental Association
3	Federation Dentaire Int.
1	National Association of Medical Examiners

- 32 respondents listed one professional organization

  19 reported two professional organizations

  14 reported three or more professional organizations

8. **QUESTION:** **LIST YOUR TEACHING POSITIONS OR FACULTY APPOINTMENTS WHICH PERTAIN TO FORENSIC ODONTOLOGY.**

Response:

- 37 reported having faculty teaching position related to forensic odontology.

  8 lecture only.

  18 respondents of the 37 hold one teaching position.

  13 hold two teaching positions.

  6 hold three or more teaching positions.

TABLE VII-1

FORENSIC ODONTOLOGIST
(General Information)

Work With	No.	Sex		Prof. Society			Age						Yrs. of Experience				
		M	F	ASFO	AAFS	AAOP	-20	21-30	31-40	41-50	51-65	65+	1-5	6-10	11-20	21-30	30+
M.E. and Coroner Office	36	36	0	24	11	6	0	0	11	13	9	3	11	12	7	+1	0
Law Enforcement	16	16	0	9	2	3	0	0	7	5	3	1	6	5	2	3	0
University	2	2	0	0	0	1	0	0	0	2	0	0	1	1	0	0	0
Hospital/ Clinic	2	2	0	2	0	0	0	0	1	1	0	0	2	0	0	0	0
Insurance Companies	2	2	0	2	0	0	0	0	1	1	0	0	0	0	1	0	1
Others	11	11	0	5	2	1	0	0	4	2	4	1	5	5	0	1	1
None or N/A	26	26	0	11	0	0	0	1	3	7	10	4	17	3	2	1	2
Total	95	95	0	51	15	12	0	1	26	31	27	9	47	26	12	6	4

9. **QUESTION:**

> THE FOLLOWING INFORMATION WILL HELP TO ESTABLISH GEOGRAPHICAL AND STATISTICAL DATA:
>
> Year of birth ____________
>
> Home or office ZIP code ____________
>
> Number of years you have been involved in Forensic Odontology ____________

Response:

- See Table VII-1 . Responses to this question are shown in context with the agencies with whom forensic odontologists work.

10. **QUESTION:**

> PLEASE PROVIDE THE NAME OF THE AGENCY OR AGENCIES FOR WHOM YOU DO ANY FORENSIC ODONTOLOGY.

Response:

23	Medical examiner's office	4	Hospital
16	Coroner's office	3	Insurance companies
10	Sheriff's office	2	Dental disaster squad
10	Police department	1	Armed forces
6	State police		
6	University		

- 34 reported working with one agency
  20 reported working with two agencies
  15 reported working with three or more agencies
  20 did not respond to the question

Findings:

- There was surprisingly little interaction reported with disaster squads and with the armed forces.

11. QUESTION:

PLEASE INDICATE IF IN YOUR FORENSIC WORK YOU DEAL WITH THE FOLLOWING GROUPS: (Check all appropriate)

☐ Law Enforcement
☐ Prosecution
☐ Defense
☐ Courts
☐ Corrections
☐ Laboratory
☐ Health Agency
☐ Hospital/Clinic
☐ Research
☐ Education/Training
☐ ME/Coroner
☐ Commercial
☐ Press
☐ Insurance Companies
☐ Other (Specify)

Response:

54	Law Enforcement
25	Prosecution
19	Defense
28	Courts
6	Corrections
22	Laboratory
9	Health Agency
23	Hospital/Clinic
15	Researcher
34	Education/Training
46	ME/Coroner
3	Commercial
8	Press
18	Insurance Companies

Response Analysis:

- The distribution of responses is somewhat different from that found for forensic anthropology wherein the responses were heavily skewed toward the beginning of the justice system (law enforcement and ME verses corrections). Here, the distribution extends over the entire system -- primarily because forensic odontologists are also involved in insurance cases and in cases involving bite marks (see responses to Question 13, which follows).

12. QUESTION:

IN WHAT CAPACITY DO YOU SERVE AS A FORENSIC ODONTOLOGIST? (Check all appropriate)

☐ Gather case evidence
☐ Analyze case evidence
☐ Testify or present evidence
☐ Give expert opinion
☐ Perform research in Forensic Odontology

Response:

39	Gather case evidence	51	Give expert opinion
55	Analyse case evidence	15	Perform research
36	Testify or present evidence		

Response Analysis:

- It should be noted that the forensic odontologist is relatively more involved in the entire process noted in the question than is the forensic anthropologist.

13. QUESTION:

APPROXIMATELY HOW MANY CASES HAVE YOU HANDLED REGARDING THE FOLLOWING:

______ Identification of human remains by teeth
______ Identification of human vs. animal teeth
______ Bite marks related to:
    ______ Homicide
    ______ Rape
    ______ Battered Child
______ Other (Specify) ______________________

Response:

- The case distribution by subject was as follows:

	Number of Cases				
Type Cases	0-4	5-9	10-14	15-30	Over 30
Identify by teeth	30	6	6	5	20
Human vs. animal	30	3	3	0	0
Bite (homicide)	18	1	1	1	0
Bite (rape)	14	1	1	1	0
Bite (battered child)	13	0	0	2	0

14. QUESTION: WHAT PERCENTAGE OF YOUR CASES ARE CRIMINAL CASES?

_______ %

Response:

% are Criminal Cases	Number of Respondents Reporting
0-9%	22
10-19%	10
20-39%	5
40-69%	11
70-89%	4
90-100%	7

Findings:

- The forensic odontologist is involved in all aspects of the justice system (police, prosecution, courts, corrections).

15. QUESTION:

APPROXIMATELY HOW MANY TIMES HAVE YOU TESTIFIED AS AN EXPERT WITNESS IN:

______ 1969
______ 1970
______ 1971
______ 1972
______ 1973
______ 1974

Response:

-

Number Times Testified	Year 1969	1970	1971	1972	1973	1974
Less than 5	25	23	28	29	33	30
5 - 9	1	1	1	1	2	1
10 - 14	0	0	0	0	0	1
15 - 19	0	1	0	0	0	0

Response Analysis:

- The figures for 1974 are incomplete in that the questionnaire was distributed in the fall of 1974.

Findings:

- The trend in the number of those testifying appears to be on an increase.
- However, it also appears that few cases result in court appearances. This is similar to the situation with the forensic anthropologist.

16. QUESTION:

THE PERCENTAGE OF TIME YOU WORK FOR THE DEFENSE IS: ________ %

FOR THE PROSECUTION: ________ %

Response:

	Defense	Prosecution
0- 9%	14	14
10-19%	4	1
20-39%	1	0
40-59%	2	1
60-89%	0	3
90-100%	2	11

Findings:

- This evidence of a "prosecution" orientation is corroborated by the results in Question 11, above.

17. QUESTION:

DO YOU FEEL THAT YOU CAN ADEQUATELY CONVEY YOUR EVIDENCE TO THE COURT AND/OR JURY?
☐ Yes ☐ No

Response:

- 60 Yes
  10 No

Response Analysis:

- Even though very few forensic odontologists reported any court experience, they nonetheless feel that they would be adequately prepared to do so.

18. **QUESTION:**

ARE YOUR MEETINGS WITH COUNSEL ADEQUATE TO PREPARE YOU FOR COURT PRESENTATION?

☐ Yes ☐ No

If "no", how might this be improved?

Response:

- 24 Yes

  7 No

- The seven that indicated No indicated a need for more time in pretrial conferences.

Response Analysis:

- The large number of those not responding further corroborated the fact that in most cases the forensic odontologist interfaces with the "entry" agencies in the justice system, e.g., law enforcement agencies and medical examiner/coroner offices.

19. **QUESTION:**

WHAT IS THE BASIS FOR YOUR COMPENSATION RECEIVED AS A FORENSIC ODONTOLOGIST?

☐ Fee for service
☐ Contract
☐ Volunteer
☐ Other (Specify) ____________

Response:

- Those reporting one basis:

24	Fee-for-service
0	Contract
21	Volunteer
5	Other (Salary-3, Part of Training-1, Hourly-1)

- Those reporting more than one basis:

  2 Fee and Contract

  12 Fee and Volunteer

  2 Volunteer and Other

Findings:

- There appears to be no recognized compensation system for forensic odontologists.

20. QUESTION:

HAVE YOU PERSONALLY BEEN FORCED TO TURN DOWN A REQUEST FOR YOUR FORENSIC SERVICES?

☐ Yes ☐ No

Response:

- 6 Yes

  75 No

- Reasons cited for "Yes" answers:

  Pressure of business

  Conflict of interest

  No fee

Findings:

- It appears that most forensic odontologists handle any request that is made of them.

21. QUESTION:

ARE THE TOTAL NUMBER OF INDIVIDUALS ENGAGED IN FORENSIC ODONTOLOGY IN YOUR IMMEDIATE GEOGRAPHIC AREA ADEQUATE TO MEET CURRENT NEEDS?

☐ Yes ☐ No

Response:

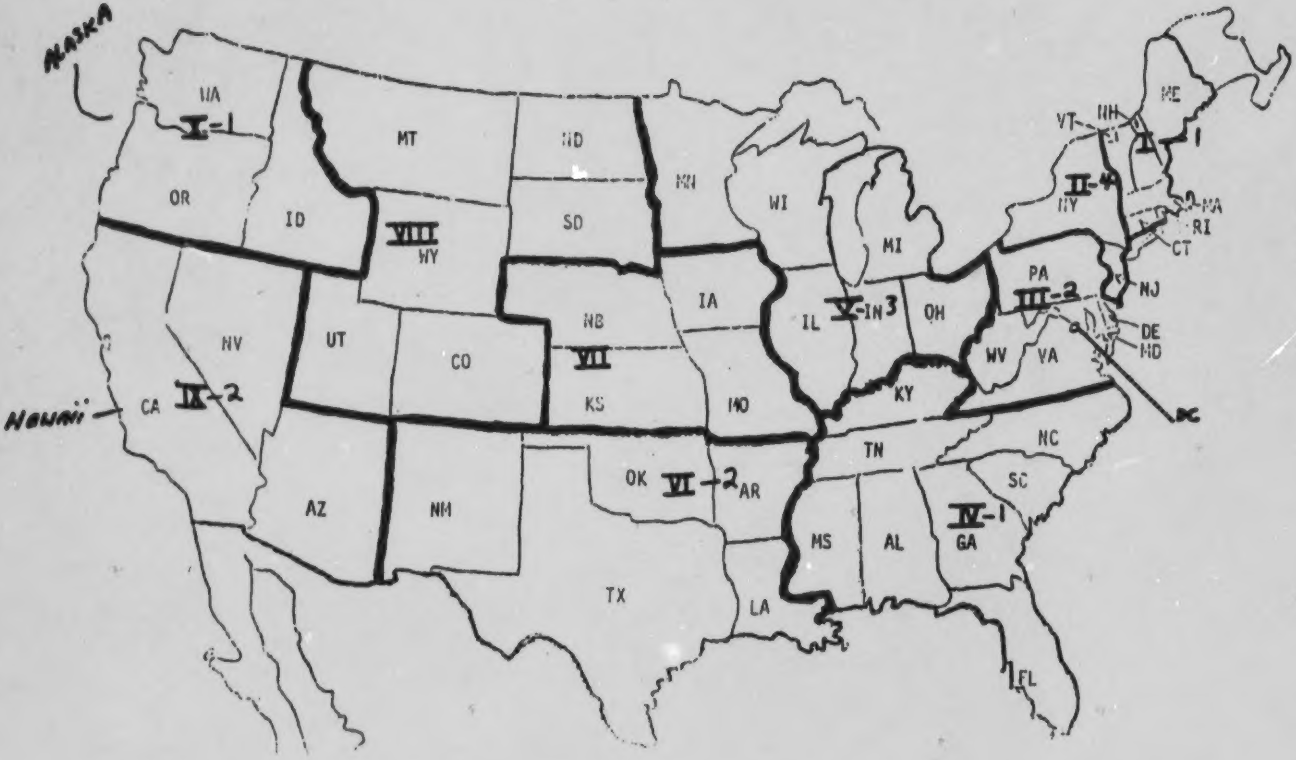
- 46 Yes
  16 No
- In addition, approximately 1/3 of the respondents felt they could not assess the adequacy of manning levels of forensic odontologists.
- The following are the "No" answers by Regions (see attached map VII-1).

LEAA Regions

Region I - 1
Region II - 4
Region III - 2
Region IV - 1
Region V - 3
Region VI - 2
Region IX - 2
Region X - 1

MAP VII-1

LEAA
REGIONS


ALASKA
WA
X-1
OR
ID
MT
ND
SD
VIII
WY
NV
UT
CO
NB
VII
KS
Hawaii
CA
IX-2
AZ
NM
TX
OK
VI-2
AR
LA
MN
IA
MO
WI
MI
IL
V-IN 3
OH
KY
TN
MS
AL
GA
IV-1
NC
SC
FL
WV
VA
PA
III-2
NJ
DE
MD
DC
NY
II-4
VT
NH
ME
I-1
MA
RI
CT

22. QUESTION:

DO YOU FEEL THAT YOUR SERVICES AS A FORENSIC ODONTOLOGIST ARE ADEQUATELY USED?
☐ Yes ☐ No

Response:

- 23 Yes

  61 No

- Those who answered "No" noted the following reasons:

  Lack of general publicity.

  Lack of communications with various agencies of government.

Findings:

- There is a general unawareness, on the part of "users", of the services that can be performed by the forensic odontologist.

23. QUESTION:

WHAT CAN BE DONE TO IMPROVE THE UNDERSTANDING AND UTILIZATION OF FORENSIC ODONTOLOGISTS BY THESE GROUPS?

Response:

- 30 Advertise (Newsletters, journals, interdiscipline participation in seminars/workshops).

  5 Education (Cross discipline training, seminars/workshop).

  35 Misc. (Directory of qualified odontologists, organization of units similar to Civil Defense, more agressiveness on part of odontologists, recognition of odontologist through establishment of full time positions in the Law Enforcement Community).

Response Analysis:

- The general theme of the responses was to develop a professional expertise and to advertise and sell the product of that professionalism to the community and to other agencies.

24. QUESTION: PLEASE INDICATE WHAT YOU BELIEVE SHOULD BE THE MINIMUM STANDARDS FOR EDUCATION, TRAINING AND EXPERIENCE FOR INDIVIDUALS IN FORENSIC ODONTOLOGY:

Response:

- Education Requirements (6 recommendations)
  - 4 Post graduate degree
  - 2 Post graduate degree in pathology
- Common Course Requirements (19 recommendations)
  - AFIP courses in odontology
  - Medicolegal training
  - Anatomy
  - Pathology
  - Physics
- Common Experience Requirements (14 recommendations)
  - Experience in Coroners', and Medical Examiners' office
  - Clinical work
  - Working association with law enforcement officals and attorneys

Findings:

- It is surprising how little thought has been given by the respondents to the matter of standards for forensic odontologists.

25. QUESTION: IN WHAT WAYS CAN THE QUALITY OF WORK DONE BY FORENSIC ODONTOLOGISTS BE IMPROVED? ______

Response:

- 30 Continuing education
  20 More information on the availability of forensic odontologists' services.
  14 More meetings and association with the law enforcement community.

26. QUESTION: IN WHAT AREAS OF FORENSIC ODONTOLOGY IS RESEARCH MOST NEEDED? ______

Response:

- Most commonly cited:
  - 18 Research in the field of "bite marks."
  - 6 Need for a standardized recording procedure and form for data to include computerization.
  - 5 Common reference material.

27. **QUESTION:**

> **ARE THE FACILITIES AVAILABLE TO YOU ADEQUATE FOR YOUR FORENSIC WORK?**
>
> **☐ Yes ☐ No**

Response:

- 49 Yes
  17 No

28. **QUESTION:**

> **WHAT ADDITIONAL FACILITIES/EQUIPMENT WOULD YOU LIKE TO HAVE?**

Response:

- Most commonly cited:

5	Complete new laboratory
6	X-Ray equipment
3	Photographic equipment
1	Lecture slides for presentations to other agencies

Findings:

- There appears to be no established standard for basic equipment and facilities needed by forensic odontologists.

CHAPTER VIII

FORENSIC PSYCHIATRY

DEFINITION

The Forensic Psychiatrist is a medical doctor with special psychiatric training. He is concerned with specialized services to include: aid in the decision as to whether a defendant is competent to participate in the trial which will determine his guilt or innocence; determination of criminal responsibility; determination of mental disorders in sex offenders; sanity hearings; commitment proceedings, etc. He performs these functions through psychiatric consultations, examinations and study of offenders, expert testimony, written reports, statements of opinions, prognosis,etc.

SURVEY BACKGROUND

The material to follow is the product of a survey taken in 1974-1975. The questionnaire was mailed to the membership of the Psychiatry Section of the American Academy of Forensic Sciences, plus the membership of The American Society of Psychiatry and the Law. In addition, 500 courts from a stratified random sample were asked to give the questionnaire to their court appointed psychiatrist(s).

Responses are as follows:

Questionnaires Mailed	Responses	% Response
800	219	27%

The response from the court sample was negligible. Many responded by letter saying that they did not have a court appointed psychiatrist or that they used government facilities. In other cases, the clerk of court responded with a copy of his letter to the court appointed psychiatrist, asking him to accomplish the questionnaire -- which he did not do.

Included in the survey were responses from 35 psychologists who were involved in the same aspects of treatment, testing, and expert testimony as were the psychiatrists. Those questionnaires were removed to avoid biasing the results.

No attempt was made to survey the psychiatric personnel working in the prison system although nine respondents indicated this as their principle area of work.

Given all of the above factors and after analyzing the qualifications of the 219 respondents, it is considered that this survey is representative of the profession.

FINDINGS

- Relatively little effort is being directed toward research in forensic psychiatry.
- Although highly involved in the practice of forensic psychiatry, considerable time is spent by forensic psychiatrists in other functions.
- There are few formal educational offerings in the United States in forensic psychiatry.
- Relatively, the forensic psychiatrist rates his forensic education and training lower than do other forensic disciplines.
- Available data indicates a paucity of published material on forensic psychiatry.
- In comparison with other forensic science disciplines, relatively few forensic psychiatrists teach in their forensic discipline.
- The percentage of females involved in forensic psychiatry is less than half that of the percentage of female psychiatrists. . (5% versus 11%)
- Less than 5% of the forensic psychiatrists cited a justice system agency as their primary place of employment.
- The majority of forensic psychiatrists employed by someone else have a private practice.
- 55% of the cases handled by the respondents were criminal cases.

- The involvement of forensic psychiatrists in criminal cases has been relatively stable since 1970.
- The involvement of forensic psychiatrists in criminal cases is predominantly by court edict.
- Forensic psychiatry is relatively more defense oriented than are other forensic disciplines.
- The forensic psychiatrist interacts, on a fairly equal basis, with all facets of the criminal justice system.
- The forensic psychiatrist is most often called to testify in the following areas: competency; criminal responsibility; medically disordered sex offender; civil litigation; sanity/insanity.
- The bulk of psychiatric evaluation work is paid for on an hourly or case basis.
- Approximately 1/3 of the income of the responding psychiatrists was derived from forensic work.
- There is an urgent need for an educational program for consumers of legal psychiatry. Lawyers should receive such material while in law school. One day special training courses should be held for judges, and continuing educational courses or seminars should be available to trial lawyers after graduation.
- The implementation of certification as a stimulus to the development of the field requires further study.
- More than any other forensic discipline, forensic psychiatrists felt that there were not enough members of their profession in their immediate geographic area.

- The psychiatrist in private practice provides the most significant amount of psychiatric service in the United States.
- Slightly greater than 50% of the forensic psychiatrists indicate that there is room for improvement in the quality of service provided by their profession.
- Trial lawyers and judges desire to make greater use of behavioral science services.

RECOMMENDATIONS

- A comprehensive study should be made of the need for a board certification program in forensic psychiatry, to include an implementation plan, if applicable.
- A model curriculum in forensic psychiatry should be prepared for medical and law schools, together with a detailed plan for "selling" the concept to the schools.
- A marketing study should be made of the need, content and form of continuing education for orientation material for consumers of forensic psychiatric services -- to include the requirement for periodic seminars on the state-of-the-art.
- Formal liaison should be established with trial lawyer and judicial organizations to ensure continuous dialogue concerning needs and capabilities.
- A nation-wide study of manpower needs/trends in forensic psychiatry should be accomplished.
- A study should be made to develop a priority list of forensic psychiatry areas in need of research. Candidate areas include: mentally disordered sex offenders; dangerousness; competency to stand trial; sanity/insanity.

1. **QUESTION:**

In reference to your *Forensic* cases only, what percentage of your time (on an annual basis) is spent on the following activities?

%

_____ Psychiatric Examination and Opinion
_____ Conclusion re mental status
_____ Present case evidence to Officials in Criminal Justice Process
_____ Give expert opinion
_____ Perform research related to Forensic Psychiatry

Response:

•

	Respondents Per Activity				
Percent Involvement	Psychiatric Examination	Conclustion re: Status	Case Evidence	Expert Testimony	Research
0 - 9%	54	109	123	98	150*
10 - 19%	19	38	31	42	17
20 - 29%	18	20	18	28	8
30 - 39%	7	6	3	5	1
40 - 59%	30	7	7	5	3
60 - 69%	10	2	1	2	2
70 - 79%	20	1	0	1	1
80 - 89%	14	1	0	1	0
90 - 100%	11	0	0	1	1

* 140 do not perform any research.

Finding:

- The time distribution data reflect that relatively little effort is being directed towards research in forensic psychiatry.

2. QUESTION:

> **What percentage of your time is devoted to Forensic Psychiatry? ____%**

Response:

-

% Time Devoted to Forensic Psychiatry	Number of Respondents
0 - 9%	49
10 - 19	35
20 - 29	26
30 - 39	13
40 - 59	22
60 - 69	5
70 - 79	4
80 - 89	9
90 - 100%	26

Response Analysis:

- The response population does not reflect the much larger number of psychiatrists who do a small amount of legal psychiatric work but who do not identify with the field and who do not belong to specialty organizations.

Finding:

- The data would indicate that although highly involved in the field, considerable time is spent in other functions.

3. QUESTION:

Did your education include any formal courses in Forensic Sciences? ☐ Yes ☐ No

If "yes", please elaborate:

Course Description	Year	Given by

Response:

- 77 Yes
  110 No

- Less than 41% of Forensic Psychiatrists had any formal courses in the Forensic Sciences.

- Common courses cited included:

17	Forensic Psychiatry
10	Psychiatry and the Law
6	Forensic Medicine
4	Forensic Pathology
4	Three month rotation in forensic psychiatry during residency

Most frequently cited institutions offering the above courses:

University of Southern California
University of California, Los Angeles
Boston University
University of Colorado
Harvard Law School
University of California, San Francisco Medical Center
San Quentin
Enoch Pratt-Baltimore

Response Analysis:

- Although only 10 of the 219 respondents indicated taking formal courses in psychiatry and the law, it is anticipated that future surveys will show a marked increase in this area.

Finding:

- There are few educational offerings in the United States in forensic psychiatry.

4. QUESTION:

Would you please provide an overall evaluation of your Forensic education and training (as applicable):

	Excellent	Good	Average	Poor
Formal Education	☐	☐	☐	☐
On-the-job training	☐	☐	☐	☐
Continuing Education	☐	☐	☐	☐
Seminars and Workshops	☐	☐	☐	☐

Response:

-

	Evaluation			
Type	Excellent	Good	Average	Poor
Formal education	23	28	26	41
On-the-job training	67	43	23	10
Continuing education	33	46	24	17
Seminars/workshops	23	44	33	23

Response Analysis:

- The results of the evaluation of formal education are questionable. In Question 3, above, only 77 respondents indicated that they had received any formal education in forensic sciences. Further investigation shows that many respondents who marked "average" or "poor" were actually criticizing their formal education for not including forensic science course material in the curriculum.

- It should be noted that despite the analysis above, 33% of those who previously indicated having had formal education in this field apparently rated that education as average or poor.

Finding:

- Relatively, the forensic psychiatrist rates his forensic education and training lower than do other forensic disciplines.

5. QUESTION:

Please list any of your memberships in professional organizations, licenses, certifications, etc., that you consider to be significant to your work in Forensic Psychiatry.

Response:

- Common memberships cited were:

68	American Psychiatry Association
65	American Academy of Psychiatry and the Law
28	American Board of Psychiatry & Neurology
26	State & Local Psychiatry Association
22	State Licensure
18	American Medical Association
9	American College of Legal Medicine
9	American Academy of Forensic Science

- Attention is invited to the basic question in that it did not ask for memberships, in general. Rather, it asked the respondents to cite memberships they considered to be significant to them in their work in forensic psychiatry. It is questionable that they did limit their response to forensic psychiatry.

6. **QUESTION:** **Please list any of your publications (in Forensic Psychiatry) that you consider to be significant for the years 1972-74. Please include title, journal, volume, and date. (Attach a separate sheet if necessary).**

Response:

- A total of forty-nine (49) respondents indicated that they had published in excess of 150 publications. Of these, 32 publications applied specifically to forensic psychiatry.
- Most authors cited one publication. However, nine listed in excess of six each.

Finding:

- Available data indicates a paucity of published material on forensic psychiatry.

7. QUESTION: Please indicate any of your teaching positions or faculty appointments which pertain to Forensic Psychiatry.

Response:

- A listing of teaching responses follows:

Medical School/Hospital Faculty	
22	Regular
18	Clinical
4	Adjunct/Lecturer
6	Formal Training of Psychiatric Residents
4	Informal " " "
2	Inservice Training
Law School Faculty	
6	Regular
10	Adjunct/Lecturer
Other Forensic Science Related Teaching Positions	
3	Law Enforcement/Criminal Justice

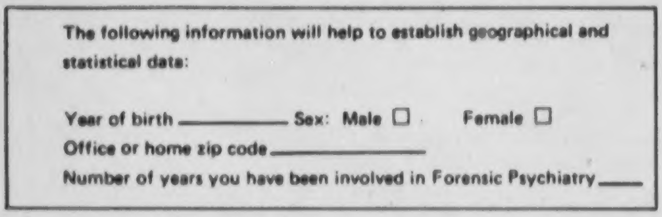
Finding:

- In comparison with other forensic science disciplines, relatively few respondents teach in their forensic discipline.

TABLE VIII-1
FORENSIC PSYCHIATRY

		Sex		Age				Yrs. Exp.				
		M	F	31-40	41-50	51-65	65+	1-5	6-10	11-20	21-30	30+
Coll./Univ./Med. School	31	31	0	10	11	7	3	11	10	9	2	1
Hospital.	41	38	3	17	9	10	5	12	10	12	1	2
Mental Health Service	28	26	2	8	9	8	4	8	6	8	5	0
Private/Self.	81	78	3	5	20	22	13	11	13	19	9	6
Other	31	29	2	8	10	6	7	8	6	9	2	1
None or N/A	7	7	0	0	1	2	4	1	2	2	1	1
Total		209	10	48	60	55	36	51	47	59	20	11

8. **QUESTION:**



The following information will help to establish geographical and statistical data:

Year of birth ________ Sex: Male ☐ Female ☐

Office or home zip code __________

Number of years you have been involved in Forensic Psychiatry ____

Response:

- See Table VIII-1, Forensic Psychiatry Profile which is oriented on the respondents Principle Place of Employment.

Response Analysis:

- Five percent of the forensic psychiatrists were female. This is in contrast to the 11% female membership of The American Psychiatrist Association (2,510 of a total of 21,360 in 1975).

Finding:

- The percentage of female forensic psychiatrists is less than half that of the percent of females in psychiatry.

9. **QUESTION:**

Which of the following describe your employment? (Check all appropriate)

☐ **Self Employed**
☐ **Employed by a government agency**
  ☐ **Federal**
  ☐ **State**
  ☐ **Regional**
  ☐ **County**
  ☐ **Local**
☐ **Employed by a College/University**
☐ **Employed by a Hospital/Medical Center/Clinic**

Response:

- 102 Self employed

  151 Government Agency
    (61) Federal government
    (53) State government
    (2) Regional government
    (33) County government
    (2) Local government

  52 College/University

  47 Hospital/Medical Center/Clinic

Response Analysis:

- Forensic psychiatrists characteristically conduct a varied professional practice, both privately and with formal organizations. Thus, 219 psychiatrists indicated a total of 352 occupational affiliations (including 102 in private practice).

10. QUESTION:

Name of Agency/Firm/Practice ____________

Response:

- The most common cited were:

  81 Private

  39 Universities/Medical colleges

  35 Mental Health Services

  32 Hospital/Medical centers

  9 Correctional Services (Prison, Probation, Parole)

  6 Courts

- Less than 5% of the forensic psychiatrists cited a justice system government agency as their primary place of employment.

11. QUESTION:

Which of the following describe your position? Check all appropriate)

☐ Administrator
☐ Supervisor
☐ Researcher
☐ Clinician
☐ Instructor
☐ Consultant
☐ Other (Specify) ____________

Response:

- 84 Administrator

  80 Supervisor

  33 Researcher

  145 Clinician

  73 Instructor

  105 Consultant

12. QUESTION:

If you are employed by an agency or firm, but you have an additional private practice, are there restrictions placed on this practice?

☐ Yes ☐ No

If "yes", please indicate the nature of these restrictions:

☐ Time limit

☐ Derived income limit

☐ Geographic restrictions (e.g. must be out of state or county)

☐ Others______________________________

Response:

- 106 respondents indicated that they are employed by an agency or firm and have an additional private practice.
- Of these, 49 indicated that there are restrictions placed on their private practice.
- And of these 49, the following is the distribution of the restrictions:

26	Time Limit
17	Derived Income Limit
6	Geographic Restriction

Finding

- The majority of forensic psychiatrists employed by someone else have a private practice.

13. **QUESTION:**

If you are employed by an agency, but you have an additional private practice, are you permitted to use:

☐ Official facilities
☐ Equipment
☐ Supplies
☐ Time

Response:

- Of the 106 respondents who acknowledged working for agencies and who have an additional private practice, 50 indicated that they were permitted to use agency facilities, etc as indicated:

34	Official Facilities
24	Equipment
21	Supplies
30	Time

14. QUESTION: What percentage of your cases are criminal cases? ____ %

Response:

-

Percent Criminal Cases	Number of Respondents
0 - 9%	45
10 - 19%	16
20 - 29%	12
30 - 39%	3
40 - 59%	16
60 - 69%	7
70 - 79%	10
80 - 89%	11
90 - 100%	69

Finding:

- 55% of the cases handled by the respondents were criminal cases.

15. QUESTION:

Approximately how many times have you testified in criminal cases?

_______ 1969
_______ 1970
_______ 1971
_______ 1972
_______ 1973
_______ 1974

Response:

-

Number Times Testified	Year					
	1969	1970	1971	1972	1973	1974
0 or no answer	97	100	100	102	99	101
1 - 5	41	34	27	23	10	22
6 - 10	18	16	18	17	25	14
11 - 15	2	5	7	11	10	12
16 - 20	8	5	5	5	9	9
21 - 25	1	3	5	3	3	3
26 - 30	3	2	4	4	6	6
31 - 50	7	12	8	9	11	8
51 - 100	2	3	6	5	5	4
Over 100	5	5	5	6	7	5
Mean Cases	9	11	12	12	13	12

Finding:

- The involvement of forensic psychaitrists in criminal cases has been relatively stable since 1970.

16. QUESTION: What percentage of your criminal cases are court appointed? ____ %

Response:

-

Percent Court Appointed	Number of Respondents
0 - 9%	31
10 - 19%	5
20 - 29%	8
30 - 39%	3
40 - 59%	20
60 - 69%	2
70 - 79%	11
80 - 89%	10
90 - 100%	91

Finding:

- The involvement of forensic psychiatrists in criminal cases is predominantly by court edict.

17. QUESTION:

What percentage of the time do you work for the defense on criminal cases?

________%

Response:

Percent for the Defense	Number of Respondents
0 - 9%	66
10 - 19%	14
20 - 29%	12
30 - 39%	8
40 - 59%	33
60 - 69%	3
70 - 79%	7
80 - 89%	9
90 - 100%	24

- The average percent of time spent on defense work was 24%.

Finding:

- Forensic Psychiatry is more defense oriented than any other forensic science discipline (coroner/medical examiner, criminalistics, forensic anthropology, forensic odontology, forensic toxicology, questioned document examination).

13. QUESTION:

Which of the following agencies/organizations do you deal with in the course of your *Forensic* work? (Check all appropriate)

- ☐ Law Enforcement
- ☐ Prosecution
- ☐ Defense
- ☐ Courts
- ☐ Corrections
- ☐ Health Agencies
- ☐ Hospitals/Clinics
- ☐ Education/Training
- ☐ Coroner/ME
- ☐ Laboratories
- ☐ Research groups
- ☐ Commercial
- ☐ Press
- ☐ Other (Specify)

Response:

- In dealing with other agencies, the following frequencies were reported:

133	Law enforcement	82	Education
164	Prosecution	16	Coroner
170	Defense	11	Laboratories
179	Courts	32	Research groups
111	Corrections	3	Commercial
82	Health agencies	34	Press
101	Hospitals		

Response Analysis:

- The spectrum of agency involvement is indicated with 1,118 agency relationships listed for the 219 respondents - an average of more than 5 per respondent.

Finding:

- The forensic psychiatrist interacts, on a fairly equal basis, with all facets of the criminal justice system.

19. QUESTION:

Are your meetings with counsel adequate to prepare you for court presentation?

☐ Yes
☐ No
If "no", how might this be corrected?____________________

Response:

- 119 Yes

  53 No

- Of those who answered "No" the most common suggestions for correctional action were:

  Attorney education

  Longer Pre-Trial Meeting

20. QUESTION:

Do you feel that you can adequately convey your findings to the court and/or jury?
☐ Yes
☐ No
If "no", how might this be corrected?____________________

Response:

- 87% felt that they could adequately convey findings to the court or jury.

- Of the 13% who answered "No", the most common complaint was concerned with the problems inherent in the advocacy system.

21. **QUESTION:**

List (in order of frequency) the areas on which you are called to testify.

1. ______________________________
2. ______________________________
3. ______________________________
4. ______________________________

Response:

- Areas cited in order of frequency were:

  Competency

  Criminal responsibility

  Medically disordered sex offender

  Civil litigation

  Sanity/insanity

  Commitment

  Dangerousness

  Family Law

  Drug Abuse

Finding:

- The forensic psychiatrist is most often called to testify in the following areas: competency; criminal responsibility; medically disordered sex offender; civil litigation; sanity/insanity.

22. QUESTION:

Which of the following describe the fee basis on which you perform work in criminal cases?

☐ On a fee for service basis
  ☐ Hourly rate
  ☐ Daily rate
  ☐ Per case fee
  ☐ Contingency fee basis
☐ Contract
☐ Volunteer
☐ Other (Specify) ______________________

Response:

- 126 on a fee for service basis
  - (88) Hourly
  - (3) Daily
  - (34) Per case
  - (1) Contingency
- 16 Contract
- 3 Volunteer

Finding:

- The bulk of psychiatric evaluation work is paid for on an hourly or case basis.

23. **QUESTION:** What percent of your income is derived from Forensic Psychiatry ___%

Response:

- The average percent of income derived from forensic work was 35%.

Finding:

- Approximately 1/3 of the average respondent's income is derived from forensic work.

24. **QUESTION:** What can be done to raise the level of understanding of your profession

Response:

- The most frequently cited examples were:

  Hold workshops/conferences, on site, with lawyers, judges, and forensic psychiatrists on common problems.

  Advertise the capabilities of forensic psychiatry through research journals, audio/video media, widely distributed rosters, etc.

  Establish closer communications within the profession.

  Standardize selected aspects of the profession.

Finding:

- There is an urgent need for an educational program for consumers of legal psychiatry. Lawyers should receive such material while in law school. One day special training courses should be held for judges, and continuing education should be available to trial lawyers.

25. QUESTION:

Do you feel there should be a special certification program in a sub-specialty of psychiatry designated "Forensic Psychiatry" or "Legal Psychiatry?"
☐ Yes ☐ No

Response:

- 106 Yes

  75 No

Response Analysis:

- The expression of a need for certification reflects an increasing awareness by those in the field, to the fact that formal recognition of status is required to stimulate education in the field and to upgrade the level of professional work. This is corroborated by the responses to Question 26, which follows.

Finding:

- The implementation of certification as a stimulus to the development of the field requires detailed study.

26. QUESTION:

Do you feel that psychiatrists should have special qualifications before they can be allowed to testify in court proceedings?

	Yes	No
Criminal Court	☐	☐
Civil Court	☐	☐

If "yes" in criminal court, what do you feel the qualifications should be? (Check all appropriate).

☐ Experience only
☐ Three years of certified training (board eligibility)
☐ Training, plus a specified number of years of general psychiatric experience
☐ Require board certification by the American Board of Neurology and Psychiatry
☐ Specific training or experience in "legal psychiatry"
☐ Other (Specify)____________________

Response:

- Criminal Court

139	Yes
44	No

  Civil Court

118	Yes
58	No

- Of those who answered "Yes" the following qualifications were cited:

23	Experience only
52	Board eligibility
54	Training plus experience
52	American Board of Neurology and Psychiatry certification
99	Special training or experience in "legal psychiatry"

27. **QUESTION:**

Are the total number of Forensic Psychiatrists in your immediate geographic area adequate to meet current needs?

☐ Yes ☐ No

Response:

- 75 Yes

  79 No

- See Map VIII-1 for distribution of "No" answers by LEAA Regions.

Response Analysis:

- This finding is corroborated by survey data from over 1200 trial lawyers and judges wherein the lawyers and judges cite "Unavailable" as their first reason for not using forensic psychiatrists more often.

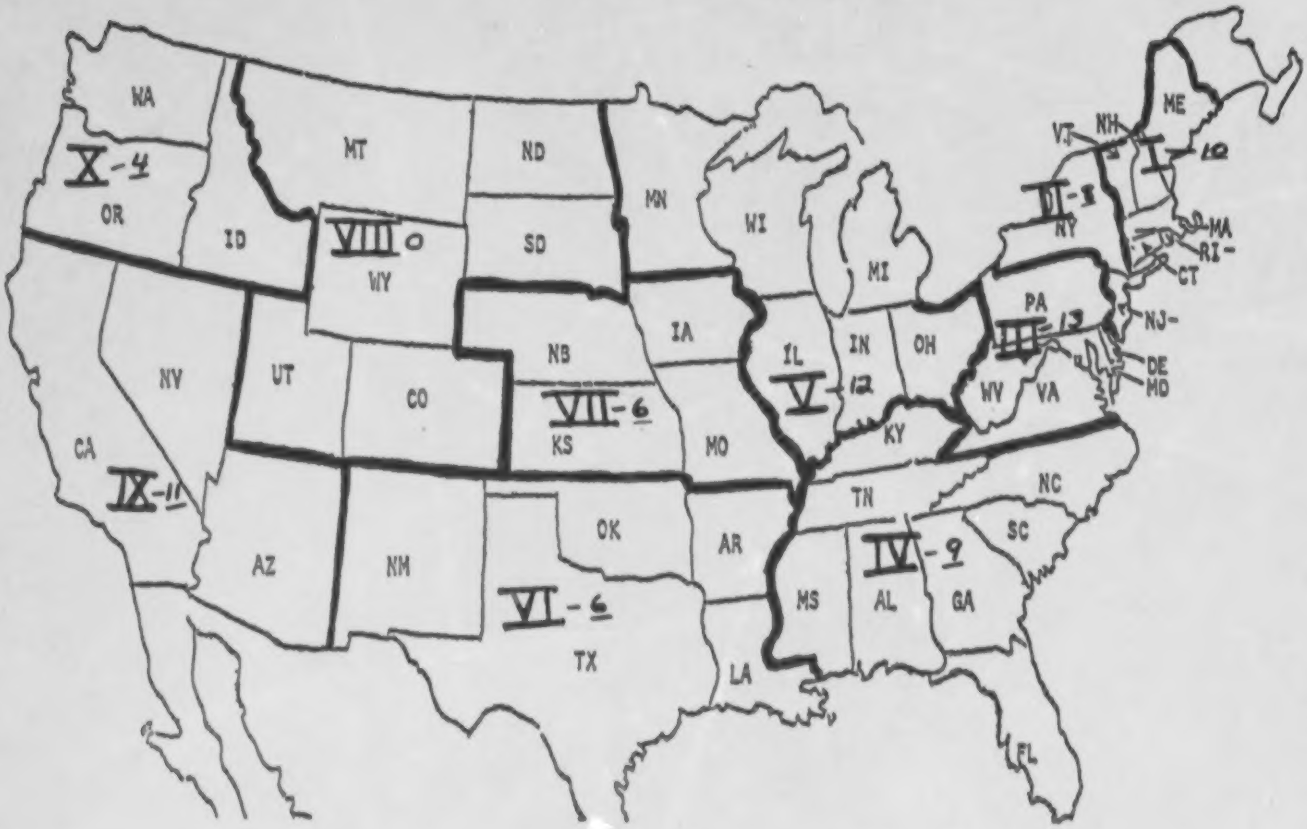
Finding:

- More than any other forensic discipline, forensic psychiatrists felt that there were not enough members of their profession in their immediate geographic area.

MAP VIII-1

Distribution of "No." Answers By LEAA Regions --

Indicating Shortage of Forensic Psychiatrists


X-4
WA
OR
ID
MT
ND
SD
VIII 0
WY
MN
WI
MI
VT
NH
ME
I-10
II-8
NY
MA
RI-
CT
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III-13
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DE
MD
WV
VA
OH
IN
IL
V-12
IA
NB
VII-6
KS
MO
KY
NV
UT
CO
CA
IX-11
AZ
NM
OK
AR
TN
NC
SC
IV-9
MS
AL
GA
VI-6
TX
LA
FL

28. QUESTION:

Which of the following provide a significant amount of legal services in your geographical area? (Check all appropriate)

☐ Psychiatrists in private practice
☐ Outpatient clinics
☐ Non-governmental psychiatric units (general and private hospitals)
☐ Government or VA Hospitals
☐ State Hospitals
☐ State Mental Health Clinics
☐ Specialized State Legal Psychiatric Units
☐ Legal Psychiatric Institutes
    ☐ State   ☐ Other
☐ Medical School Department of Psychiatry
☐ Court Clinic or Court Psychiatrists
    ☐ Court-run
    ☐ Division of State Department of Mental Health
☐ Other (Specify) ______________________

Response:

147	Psychiatrists in private practice
52	Outpatient clinics
24	Hospitals (general and private)
33	Hospitals (VA or government)
91	Hospitals (state)
50	State mental health clinics
35	Specialized state units
12	Legal psychiatric institutes
53	Medical school psychiatry department
72	Court clinic or psychiatrists

Response Analysis:

- As reflected in the data, a number of service delivery systems are currently operational. The current emphasis on private practitioners as the common provider of such services may be indicative of a lack of knowledge, on the part of the public, as to where services are available. It may also be symptomatic of a general distrust of structured systems.

Finding:

- The most significant source of psychiatric service is the psychiatrist in private practice.

29. **QUESTION:**

Who do you feel *should* be the primary provider of legal psychiatric services?

☐ Private Psychiatrists
☐ Regional Legal Psychiatric centers, under state control
☐ Regional Legal Psychiatric clinics, under Medical School control
☐ Regional Legal Psychiatric clinics, in conjunction with other psychiatric programs
☐ Other (Specify) ____________________

Response:

-

78	Private psychiatrists
23	Regional centers - state control
16	Regional centers - medical school control
50	Regional centers - with other psychiatric programs
16	Other means

- The preference for psychiatrists in private practice is in agreement with the results of the current situation (Question 28).

30. **QUESTION:**

Do you consider the quality of legal psychiatric work done in your geographic area to be:

☐ Excellent
☐ Good
☐ Mediocre
☐ Poor
☐ Too variable to classify

Response:

24	Excellent
76	Good
32	Mediocre
17	Poor
39	Too variable to classify

Response Analysis:

- The grouping of opinions at the "good" level reflects the awareness of professionals in the field to the fact that things are not as they should be.

Finding:

- Slightly greater than 50% of the forensic psychiatrists indicate that there is room for improvement in the quality of service provided by their profession.

31. **QUESTION:**

> What do you feel are the steps to be taken in order to raise the quality of psychiatric work?

Response:

- The most common steps cited were:

  Require more formal training in Forensic Psychiatry.

  Require continuing education.

  Joint training/seminars with lawyers, judges, police, etc.

  Standards/certification.

  Eliminate the adversary process.

  Establish local societies in the profession.

Finding:

- There is a requirement for more educational opportunities in forensic psychiatry -- both in formal training and in continuing education.

32. **QUESTION:**

> What could be done to make legal psychiatric work more attractive to a psychiatrist?
>
> ☐ Better training in residency
> ☐ Improved remuneration
> ☐ Restriction of participation to court appointed psychiatrists
> ☐ Changes in judicial procedures to reduce time spent in court
> ☐ Other (Specify) ________________________
> ________________________

Response:

134	Better training in residency
85	Improved remuneration
31	Restriction of participation to court appointed psychiatrists
89	Changes in judicial process to reduce time spent in court./

33. QUESTION:

Do you think the services of the Forensic Psychiatrist are adequately used?

☐ Yes
☐ No
If "no", how might this be improved?________________

Response:

- 56 Yes
  109 No

Response Analysis:

- This response is strangely supported by a survey of 691 trial lawyers and 639 judges [1], wherein the respondents indicated that they used behavioral science data in 18% of their cases. However, 77% indicated that more use of reports from psychiatrists and psychologists and greater availability of their services would be helpful. They then went on to say that the main reasons why they didn't make more use of behavioral science service was because it was unavailable or too costly.

Finding:

- Trial lawyers and judges desire to make greater use of behavioral science services.

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[1] The survey was conducted as a part of this assessment of forensic science personnel and is included in a separate report, "The Forensic Sciences in American Criminal Justice -- a Legal Study Concerning The Forensic Sciences Personnel" by Oliver Schroeder, Jr.

34. **QUESTION:**

In what ways should the role of the legal psychiatrist be expanded in criminal cases?

☐ Responsibility Evaluations
☐ Competency to stand trial
☐ Behavioral and psychological evaluation on a broader scale
☐ Other (Specify) ____________________

Response:

49	Responsibility Evaluations
54	Competency to stand trial
103	Behavioral and psychological evaluations on a broader scale

35. **QUESTION:**

In what areas of Forensic Psychiatry is research most needed?

____

Response:

- Common areas cited were:
  - Prediction of dangerousness
  - Treatment of offenders
  - Corrections
  - Recidivism
  - Definition of responsibility
  - Sanity/insanity

CHAPTER IX

FORENSIC TOXICOLOGY

DEFINITION

A Forensic Toxicologist is a trained scientist who applies his acquired knowledge and skills to the chemical analysis of biological specimens so as to ascertain whether or not exogenous chemical substances are present. He interprets these findings in terms of the hazard they represent to the person involved. Usually he is concerned with post mortem specimens but in some instances analyses of samples from living individuals fall within his purview. He interacts with other members of the forensic science team and presents his expert testimony, written reports and interpretations to his associates and to the courts.

SURVEY - BACKGROUND

The material to follow is the product of a survey taken in 1974-1975. The questionnaire was mailed to 198 members of the Toxicology Section of The American Academy of Forensic Sciences; to 40 individuals on a list provided by Finnigan Corporation, and to approximately 200 names culled from a toxicology survey conducted in 1970 by the National Library of Medicine. The last list was grossly out of date (137 returns marked "No Forwarding

Address") -- thus reducing that total to 63 potential respondents.

A separate survey of "toxicology agencies" was attempted in an effort to acquire management data applying to forensic toxicologists. Regrettably this portion of the forensic science personnel assessment had to be abandoned. Too few independent toxicology laboratories were located, and fewer still responded.

The paucity in the responses to the Toxicology Laboratory questionnaire substantiates the thesis that few Forensic Toxicology Laboratories are independent entities -- in the sense that Coroner/Medical Examiner Offices and Crime Laboratories are distinct management units. By far and large Forensic Toxicology Laboratories exist as sub-units of governmental agencies - usually in Health Departments, Medical Examiner's or Coroner's offices. A small number of separate units are found in State Police or Crime Laboratories. Generally the head of the toxicology department has little input in overall administrative matters but usually has a responsibility to recommend on personnel, equipment and on some policy decisions as they relate to the laboratory's function. Seldom are they involved in planning, designing, submitting or defending budgets. The daily service load is the primary area that is within the chief toxicologist's purview. As time permits, some toxicologists may devote some of their time to research, method development or teaching.

Responses to individual questionnaires are as follows:

Questionnaires Mailed	Responses	% of Response
301	123	41%

FINDINGS

- Although the respondents' most common job title included the word "toxicologist", only 7% included the word "forensic"; yet 62% of the total respondent's work time was spent in forensic toxicology.

- The majority of the respondents were forensic or clinical toxicologists by education, training, or experience. Few had formal academic education in toxicology; the preponderant group entered the field by on-the-job-training or through self education.

- Forensic toxicology has an identification problem in terms of the title of the place of employment, job title, and the amount of time spent on forensic toxicology matters.

- Most forensic toxicologists spend their limited research time on case related material investigations -- as opposed to the development and application of new methods.

- The majority of the criminal cases examined by forensic toxicologists and on which they give expert testimony in court involve ethanol and drugs.

- Although one third of the forensic toxicologists perform private casework, such work only absorbs 3% of their time and accounts for approximately 3% of their annual income.

- Compensation for private case work is normally on a fee-for-service basis.

- The forensic toxicologist usually presents his objective findings to the court as a prosecution witness, on criminal cases.

- Slightly over half of the forensic toxicologists render an opinion concerning physiological and psychological effects of their analytical findings.

- Few of the 123 responding forensic toxicologists have any degree in toxicology, and fewer still have a degree in forensic toxicology.

- There are very few formal academic forensic toxicology courses leading to a Ph.D. available to students. The number of programs offering an MS degree is growing, but still very small.

- Of the several forms of education and training, forensic toxicologists rated their on-the-job training the highest.

- Because of a lack of standardized sets of job titles and descriptions, it is impossible to compare rates.

- The average forensic toxicologist is: a 39 year old male who has a post graduate degree, who works for a state or county agency, and has 10 years of experience.

- 41% of the respondents have less than five years of forensic toxicology experience.

- The greatest employment opportunities in forensic toxicology have been in state systems.
- Whereas laboratory operations and facilities are considered to be adequate, forensic toxicologists are relatively less satisfied with the administrative procedures and personnel policies in their organization.
- There are few acceptable library facilities available in forensic toxicology laboratories.
- The average consumer of forensic toxicology services does not understand the capabilities and limitations of the laboratory.
- There is no system of toxicology reference laboratories in the United States -- where methods can be tested, training accomplished, and difficult cases analyzed.
- Forensic toxicologists believe that quality control programs and proficiency testing are desirable and should be implemented.
- Certification of forensic toxicologists is also needed.

RECOMMENDATIONS

- A detailed study should be made of the need for professional identification, to include: the requirement for common job titles and descriptions; the need for personnel management data pertaining to the total forensic toxicology population, identified places of employment, job opportunities, and salary information. The report should cover the means by which such data would be incorporated in Department of Labor Statistical Reports.

- Companion to the above study, a second study should concentrate on the need for managerial statistics on budgets, personnel, operations and capital investment for inclusion in Department of Justice published reports.

- Formalized management and personnel reporting systems should include standardized definitions of terms and, where possible, uniform reporting periods.

- A recognized academic educational and vocational training program should be designed and implemented as a matter of priority. Included would be consideration of the need for degreed programs as well as for internships or residencies (in accredited facilities). A companion continuing education program should provide the mechanism for accredited course offerings at universities or in conjunction with local, regional, and some national seminars, workships, and professional meetings. A fellowship program should be developed, to include sabbatical leaves.

- As has been accomplished for criminalistic laboratories, a detailed study of the future needs for forensic toxicology services should be accomplished to include the development of services standards.

- Every effort should be made to develop an annual priority list of research needs in the forensic toxicology profession. Companion to this, a plan should be made for the creation of a central clearing house of information on research in progress.
- A formalized quality control and proficiency program should be implemented for forensic toxicologists and for their laboratories.
- A certification and recertification program in forensic toxicology should proceed without delay.
- A system of intra-professional and inter-professional communications should be established as a means to expand knowledge of the state-of-the-art and to promulgate personnel matters of importance.
- A national system of regional toxicology laboratories is needed -- to serve as reference laboratories for the development and evaluation of methods, to train personnel, and to assist in the analyses of difficult samples submitted to it by other laboratories.

TABLE IX-1

SAMPLE OF COMPOSITE JOB DESCRIPTIONS - TOXICOLOGY LABORATORIES

TITLE: Toxicologist I

EDUCATION: B.S. in physical science

EXPERIENCE: From entry level to two years experience in toxicology laboratory.

JOB DESCRIPTION: Responsibilities include:

1. Perform routine laboratory examinations, tests, and analyses to determine extent of toxicity on human or animal organs, edibles, inorganic matter, or other materials involved in criminal cases suspected of creating illness or death.
2. Prepare evidence for court presentation.

TITLE: Toxicologist II

EDUCATION: B.S. in Physical Science

EXPERIENCE: 2-4 years experience in toxicology laboratory

JOB DESCRIPTION: Responsibilities include:

1. Performance of difficult technical work in laboratory.
2. Aid in planning activities of lab.
3. Supervision of lower level toxicologists.
4. Preparation or supervision of others in their development of evidence for court.

TITLE: Toxicologist III

EDUCATION: M.S. in Toxicology or related physical sciences.

EXPERIENCE: Six years experience in a toxicology laboratory.

JOB DESCRIPTION: Responsibilities include:

1. Performing a wide variety of highly specialized toxicological analyses relatively independent of supervision.
2. Serving as an expert witness in court on the full scope of toxicological examinations and analyses, to include methods of isolation, identification, quantitation and interpretation of findings.

TITLE: Chief Toxicologist

EDUCATION: Ph.D. in toxicology, analytic chemistry or closely related field.

EXPERIENCE: Extensive experience in supervision of toxicology lab, thorough knowledge of toxicological principles, practices, and techniques.

JOB DESCRIPTION: Administer a program of analytical forensic toxicology; plan, organize and evaluate the various functions of the toxicological program such as servicing law enforcement agents from all levels of gov't., internal and external departmental requests, coroners, physicians and the general public.

TITLE: Director of Toxicology Laboratory

EDUCATION: Ph.D. in toxicology or closely related physical sciences.

EXPERIENCE: Extensive experience--technical competence in clinical toxicology, administrative ability.

JOB DESCRIPTION: Duties include:

1. Responsibility for all technical and administrative phases of the toxicology program; assisting and directing the performance of highly technical analysis.
2. Development and establishment of toxicological laboratory procedures and determination of techniques.

1. QUESTION: What is your official Toxicology job title?

Response:

- The 123 forensic toxicologists cited the following as the most common job titles:

  33 - Toxicologist
  29 - Chief Toxicologist
  8 - Toxicologist, I.(2); II.(3); III.(2); IV.(1)
  8 - Chemist
  5 - Chemist I.(1); II.(2); III.(2)
  5 - Criminalist
  5 - Chief Forensic Toxicologist
  4 - State Toxicologist
  3 - Forensic Drug Chemists
  3 - Professors of Toxicology
  3 - Senior Biochemist

Response Analysis:

- At Table IX-1 is a sample of composite job descriptions gleaned from a study of several sets of titles currently in use at toxicology laboratories:

Finding:

- The most common titles cited were Toxicologist or Chief Toxicologist.
- Very few titles indicated the presence of a career/promotion system within the profession, i.e., Toxicologist I, II, III, etc.
- 20% of the titles are non-specific in terms of toxicology and only 7% indicate the "forensic" nature of the work--yet 62% of the total respondent time was spent on forensic toxicology.

2. QUESTION:

What is your specialty in the field of Toxicology? ____________________________

Response:

- The most common specialties cited were:
    - Forensic Toxicology
    - Analytical Forensic and Clinical Toxicology
    - Forensic Drug Analysis

Finding:

- The respondents were Forensic or Clinical Toxicologists.

3. QUESTION:

Please indicate what percent of your normal working time is spent on each of the following:

______ % For a Toxicology Laboratory
______ % For a Criminalistics Laboratory
______ % In Private Toxicology Work
______ % In Non Forensic Toxicology Work
______ % Other (Specify)

Response:

- Correlations with the place of employment produced the following:

Number Employed	Employing Agency
28	Coroner/Medical Examiner
22	Crime Laboratory
20	Public Health Department
14	Private Laboratory
9	Toxicology Laboratory
8	Hospitals
8	Universities
14	Others (Military, Private Practice, etc.)

- Respondents who work for Coroner/Medical Examiner Offices devoted over 95% of their time to toxicology cases--of which 82% of the time was spent on forensic toxicology work.

- Those in Public Health Departments spent an average of 79% of their time in the toxicology laboratory; working on forensic cases approximately 63% of the time.

- Those employed by Crime Laboratories were considerably less explicit in their answers, but it is clear that their percent involvement in forensic toxicology was less than those in Public Health Service work.

Finding:

- Forensic toxicology has an identity problem in terms of the title of the place of employment, job title, and the amount of time spent on forensic toxicology matters.

4. QUESTION:

Approximately what percent of your time is spent on the following Toxicology related activities?

_______ % Administration
_______ % Supervision
_______ % Bench Work
_______ % Report Writing
_______ % Official Travel
_______ % Court Appearances
_______ % Presenting Findings to other agencies (Police,
_______ Prosecution, etc.)
_______ % Research
_______ % Scientific Training
_______ % Consulting

Response:

- The greatest amount of time was spent on bench work.
- Following are the mean % of times devoted to each indicated activity.

MEAN % OF TIME	ACTIVITY
12%	Administration
15%	Supervision
34%	Bench work
9%	Report preparation
3%	Travel
6%	Court Appearances
2%	Presenting findings to other agencies
9%	Research
7%	Training
3%	Consulting

Response Analysis:

- Although 9% of the time, on an average, was spent on research, subsequent investigation revealed that much of the forensic toxicology research was case oriented. Very little time was spent in the development and application of methods that might improve the efficiency and reliability of laboratory results.

Table IX-2

Average Number of Cases Examined/Given Expert Testimony

CATEGORY	EXAMINED			EXPERT TESTIMONY		
	'71	'72	'73	'71	'72	'73
MEDICAL-LEGAL	1071	912	825	36	30	25
CLINICAL	866	950	1128	5.8	6.3	5.6
DRUG SCREENING	5760	5250	7050	276	274	187
PRE-EMPLOYMENT SCREENING	1970	1485	1186	6	10	10
OTHERS (BLOOD/ALCOHOL, ETC.)	696	830	1039	101	65	17

5. QUESTION: Approximately how many cases in the following categories have you examined/given expert testimony?

Category	Examined				Expert Testimony			
	1971	1972	1973	1974 (Est.)	1971	1972	1973	1974 (Est.)
Medical-Legal (Coroner, ME or Police referred)								
Clinical								
Drug Screening								
Pre-Employment Screening								
Other (Specify)								

Response:

- See Table IX-2, for a listing of the average caseloads.

Finding:

- As in the case of criminalists and criminalistics laboratories, the submissions for this question reveal the lack of a standard definition for "caseload" reporting. "Cases" are reported as "examinations" and vice versa. As examples (based on Table IX-2):

  In 1971, an average 56% of the cases examined by the forensic toxicologist were drug screening cases.

  In 1973, 63% of the cases were drug screening.

  The total forensic toxicology examination caseload increased by 9% from 1971 to 1973, while drug screening increased by 22%.

- The majority of the criminal cases examined by forensic toxicologists, and which they gave expert testimony in court involved ethanal and drugs.

6. QUESTION:

a. Do you handle cases in any geographic area (other states, etc.) other than your primary place of employment?

☐ Yes ☐ No

b. If "yes", approximately how many per year?

Response:

- 30% of the individuals handle cases from geographic areas outside their primary place of employment.
- Of those who handle cases outside of their primary place of business the following is a distribution of the number of cases so handled:

Nr. of Respondents	Cases Handled
18	1 - 25 cases
9	26 - 75 cases
4	76 - 175 cases
3	176 - 275 cases
2	276 - 375 cases
1	376 - 475 cases

7. QUESTION:

a. If you are employed by a laboratory are you authorized to accept cases privately? ☐ Yes ☐ No

b. If "yes", are you permitted to use official:

- ☐ Facilities
- ☐ Equipment
- ☐ Supplies
- ☐ Working time (Normal)

c. If "yes", are any of the following restrictions placed on the practice?

- ☐ Time Limit
- ☐ Derived Income Limit
- ☐ Limited to Civil Cases
- ☐ Cannot testify in court
- ☐ Geographic Restrictions (such as "out of state," etc.)
- ☐ Other (Specify) ____________

d. Approximately what percent of your annual income is derived from outside cases? ______ %

Response:

- a. 42 toxicologists (34% of the total respondents) employed by a laboratory are able to accept private cases.
- b. The 42 who accept private cases are authorized to use the following:

Number of Respondents	Offical Use
24	Facilities
22	Equipment
20	Supplies
21	Working Time

Response Analysis:

- Of the 42, more than half handle cases solely from within their geographical region.

- c. Those who accept private cases are restricted in their practice as follows:

  2 - Time Limit
  1 - Derived Income
  4 - Civil Cases only
  1 - Cannot testify in court
  2 - Geographic Restriction

- d. % of Annual Income derived from outside cases:

% of Total Income	Nr. of Respondents*
0	5
Less than 1%	6
1%	5
2%	10
5%	7
10%	2
20%	1
90%	1

* Not all respondents answered every question.

Response Analysis:

- Assuming that the 3% "Consulting" rate cited in Question 3, above, refers to the "Private" case work indicated in this Question -- then the salary derived from private work (2.8% of total annual income) represents a rate charged for private work that is approximately the same as the normal salary rate.

Finding:

- Although a third of the respondents perform private case work, such work only absorbs 3% of their time and constitutes an average of 2.8% of their total annual income.

- Toxicologist fees for service rates are commensurate with salary rates.

8. QUESTION:

a. If you perform private case work is it done on the basis of: (Check all appropriate)

☐ Fee-For-Service
☐ Contract
☐ Salary
☐ Free
☐ Other (Specify) ______________________

b. In your private case work from whom are the cases referred?

☐ Law Enforcement
☐ Attorneys
☐ Colleagues
☐ Insurance Companies
☐ Coroners/Medical Examiners
☐ Other Laboratories
☐ Others (Specify)

Response:

- a. Private case work is generally done on a fee-for-service basis.

28	Fee-for-service
1	Contract
3	Salary
6	Free

- b. Referrals for private case work come from:

15	Law enforcement
30	Attorneys
14	Colleagues
9	Insurance companies
14	Coroner/Medical Examiner
16	Other labs

Finding:

- Compensation for consultation work is normally on a Fee-For-Service basis.

9. QUESTION:

> *Approximately* what percent of your cases are civil cases? ______%

Response:

- Only 15% of the cases handled are civil cases.

10. QUESTION:

> In what *approximate* percentage of the time do you work for the defense? ______%

Response:

- Only 15% of the cases are for the defense.

Finding:

- The toxicologist is most frequently called to court by the prosecution concerning criminal cases.

11. QUESTION:

In presentation of expert testimony, do you:

☐ a. Limit testimony to analytical findings
☐ b. Render an opinion concerning psychological effects of analytical findings

Response:

- In their presentations to the court, slightly over half limited their testimony to analytic findings while just under half also presented opinions concerning psychological effects of analytic findings.

54 - Limit testimony to analytical findings.

59 - Render opinion concerning physiological and psychological effects of analytical findings.

12. QUESTION:

List (in order of frequency) the topics on which you are called to testify. (Please limit to four).

1. ______________________________
2. ______________________________
3. ______________________________
4. ______________________________

Response:

-

	Frequency	
Topics	Most	Next
Alcohol	47	9
Drugs	40	37
Other	20	26

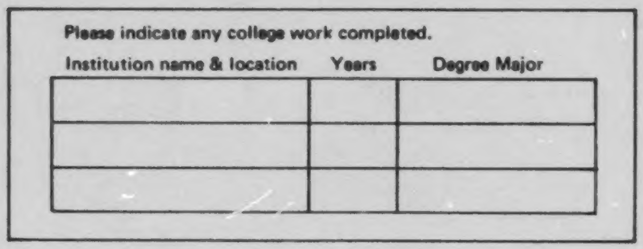
Response Analysis:

- The response to Question 5 is in conflict with this response -- as it pertains to alcohol. The results of this question are accepted as being relatively more accurate.

Finding:

- The main topics on which forensic toxicologists testify are drugs and blood/alcohol matters.

13. QUESTION:



Please indicate any college work completed.

Institution name & location	Years	Degree Major

Response:

- The highest degree attained was:

  40 - Bachelors Degree

  26 - Masters

  53 - Ph.D.

- Of the above, 6 Masters and 12 Ph.D's stated that their degree was in toxicology.
- The roster of educational opportunities in forensic toxicology is included in another volume of the project.

Finding:

- Few of the 123 responding forensic toxicologists have any degree in toxicology, and fewer still have a degree in forensic toxicology.

14. QUESTION:

a. Do you teach or are you a student in Forensic Science related continuing education? ☐ Yes ☐ No

b. If "yes", in which of the following types of education/training have you participated *since January 1972?*

☐ On-the-job training
☐ Seminars (by whom and what subjects?) ________________
____
(Indicate colleges/manufacturers/professional societies/other operating agencies)
☐ Workshops (by whom and what subjects?) ________________
____
☐ Professional Meetings (Which?) ________________
____
☐ College Credit Courses (Title and College) ________________

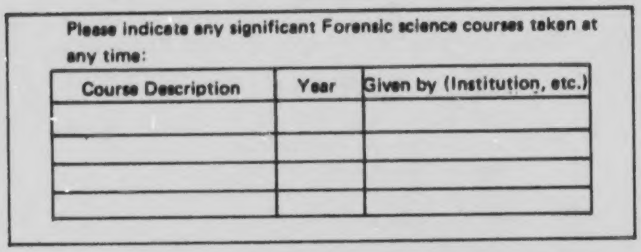
Response:

- a. 63% of the respondents either teach or are students in continuing education.

  b. Of those who responded "Yes" the following types of education/training were indicated:

Number of Responses	Type Continuing Education/Training
52	On-the-job training
61	Seminars
38	Workshops
58	Professional meetings
34	College credit course

15. QUESTION:



Please indicate any significant Forensic science courses taken at any time:

Course Description	Year	Given by (Institution, etc.)

Response:

- The following significant forensic science courses were cited:

  23 - Forensic Toxicology

  9 - Criminalistics

  8 - Instrument Analysis

  7 - Drug Analysis

  5 - Forensic Chemistry

  3 - Legal Medicine

  12 - Others

- Of the respondents, 14 cited two science courses and 5 cited three or more courses.
- 65% indicated no significant forensic science courses.

Finding:

- There are very few formal academic forensic toxicology courses leading to a Ph.D. available to students. The number of programs offering an MS degree is growing, but still very small.

16. QUESTION:

Please provide an overall evaluation of your *Forensic* education and training (as applicable)

	Outstanding	Good	Fair	Poor
Formal Education (Degreed Program)	☐	☐	☐	☐
On-the-Job Training	☐	☐	☐	☐
Continuing Education (Short Courses	☐	☐	☐	☐
Seminars and Workshops	☐	☐	☐	☐
Professional Meetings	☐	☐	☐	☐

Response:

•	Outstanding	Good	Fair	Poor
Formal education	21	35	17	9
On-the-job training	46	56	11	0
Continuing education	5	32	25	11
Seminars/workshops	7	47	27	7
Professional meetings	20	59	19	9

Response Analysis:

- In view of the small number of respondents who previously indicated any formal education in forensic toxicology, the ratings for "Formal Education" are suspect. It appears that the respondents actually rated their general education as opposed to their forensic education.

Finding:

- Forensic toxicologists rate their education/training in the following highest to lowest order:

On-the-job training

Professional meetings

Formal education

Seminars/workshops

Continuing education

17. QUESTION:

So that we may assemble data for counseling and recruiting, please provide information regarding your Forensic Science career experience in the following space. (Start with your first job or consultation and show any others you consider to have been significant in your career.)

Position Description or Title	Years	Salary Range	Reason for Change
1.			
2.			

Response:

TABLE - FREQUENCY DISTRIBUTION OF SALARIES -- BY JOB TITLES

	Salary Range (In Thousands)				
Title	$10-14	$15-19	$20-29	$30-39	$40+
Toxicology Lab. Dir.	-	-	6	2	1
Chief Toxicologist	1	4	9	3	-
Toxicologist	7	9	12	1	-
Toxicologist I	2	-	-	-	-
II	4	5	1	-	-
III	-	1	-	-	-
Chief Chemist	-	1	2	-	-
Chemist	5	5	-	1	-
Chemist I	-	-	-	-	-
II	2	-	-	-	-
III	1	1	-	-	-
Criminalist	4	3	1	-	-
Other	1	1	2	-	-

- The mean salaries are as follows:

Toxicology Lab Dir.	$28,900
Chief Toxicologist	$24,100
Toxicologist	$19,700
Toxicologist I	$12,000
II	$15,800
III	$17,000
Chief Chemist	$22,300
Chemist	$14,500 (highest salary omitted)
Chemist I	-
II	$12,000
III	$15,000
Criminalist	$15,500

Response Analysis:

- The above salary data is suspect because of the profusion of job titles in the field of toxicology (see Question 1) together with the fact that salaries must be equated to the precise location of the title in each specific organizational hierarchy.

- The following salary data (collected from laboratories) reflects the impact of "organization level" on the salary structure.

TITLE	MEAN SALARY	TITLE	MEAN SALARY
#1		#2	
State Toxicologist	$20,000	Chief Toxicologist	$33,000
Asst. Toxicologist	15,000	Analytical Chemist	14,500
Clinical Chemist	10,000	Chemical Analyst II	11,400
		Chemical Analyst I	10,500
#3		#4	
Head Toxicologist	$24,500	Chief Toxicologist	$22,600
Supervisory Toxicologist	?	Chemist III	13,800
Toxicologist, Senior	16,300		
Toxicologist	14,600		
#5		#6	
Toxicologist	$14,000	Director	$25,000
		Analyst	15,000
		Chemist	14,000
#7		#8	
Director	$30,000	Director	$20,000
Asst. Director	21,000	Asst. Director	12,500
Tech. Head	12,700	Toxicologist	9,700
		Asst. Toxicologist	8,100
#9		#10	
Toxicologist	$27,300	Chemist	$10,800
Asst. Toxicologist	20,600		
Chemist	12,600		
#11		#12	
Chemist V (Chief)	$18,400	Chemist III	$13,900
Chemist IV	16,900	Chemist II	10,400
Chemist III	15,600	Chemist I	9,100
Chemist II	13,500	Chemist Asst. I	6,300

Finding:

- Because of a lack of standardized job titles and job descriptions, it is impossible to compare salary rates.

18. QUESTION:

If your present position requires special qualifications, please indicate. (Check all appropriate)

a. Personal Qualifications
- ☐ Age
- ☐ Sex
- ☐ Race
- ☐ Height
- ☐ Weight
- ☐ Eyesight
- ☐ Citizenship
- ☐ Background Investig.
- ☐ Place or Residence
- ☐ Other (Specify) ____________

d. Professional
- ☐ Certification ____________ (By Whom)

b. Testing
- ☐ Proficiency ____________ Type
- ☐ Dexterity
- ☐ Intelligence
- ☐ Psychological
- ☐ Other ____________

c. Yrs. of Experience (Circle one)
1 2 3 4 5 6 7 8 9 10

e. Education
- ☐ High School
- ☐ College (Bachelors)
- ☐ Graduate School
- ☐ Specialty Courses
- ☐ Other (Specify) ________

Response:

- a. Personal Qualifications

16 - Age

1 - Sex

0 - Race

1 - Height

0 - Weight

2 - Eyesight

35 - Citizenship

50 - Background

25 - Place of Residence

- b. Testing
  - 24 - Proficiency
  - 11 - Dexterity
  - 22 - Intelligence
  - 8 - Psychological
- c. The mean number of years of experience was
- d. Certification By:
  - 10 - State Certification
  - 5 - Professional Societies
- e. Education
  - 52 - College Degree (Bachelors)
  - 50 - Graduate School
  - 15 - Specialty Courses

Response Analysis:

- Query of 15 laboratories that perform toxicology analyses was made as to "Age" requirements. Only one indicated that it used "Age" as a minimum entry requirement and none used it thereafter (promotion). This is at considerable odds with the response from individuals wherein 16 reported that "age" was a special qualification.
- The results for "Years (sic) of Experience" is considered to be invalid. Because of the variations in the individual positions in question, it was impossible to achieve comparable results.

19. QUESTION:

The following information will help to establish geographic and statistical information:

a. Year of birth: __________
b. Sex ____ Male ____ Female
c. Work or home zip: ________________
d. Total number of years in Forensic Toxicology __________

Response:

- Map IX-1shows a geographic distribution of the respondents.
- See Table IX-3for a profile of the forensic toxicologist.

Finding:

- The average forensic toxicologist:
  - Thirty-nine years of age
  - Male
  - Ten years of forensic toxicology laboratory experience
  - A college graduate with post graduate degrees
  - Works for a state or county agency
- Most forensic toxicologists have less than five years of experience in the profession.

MAP IX-1

Distribution of Toxicology Respondents by LEAA REGIONS

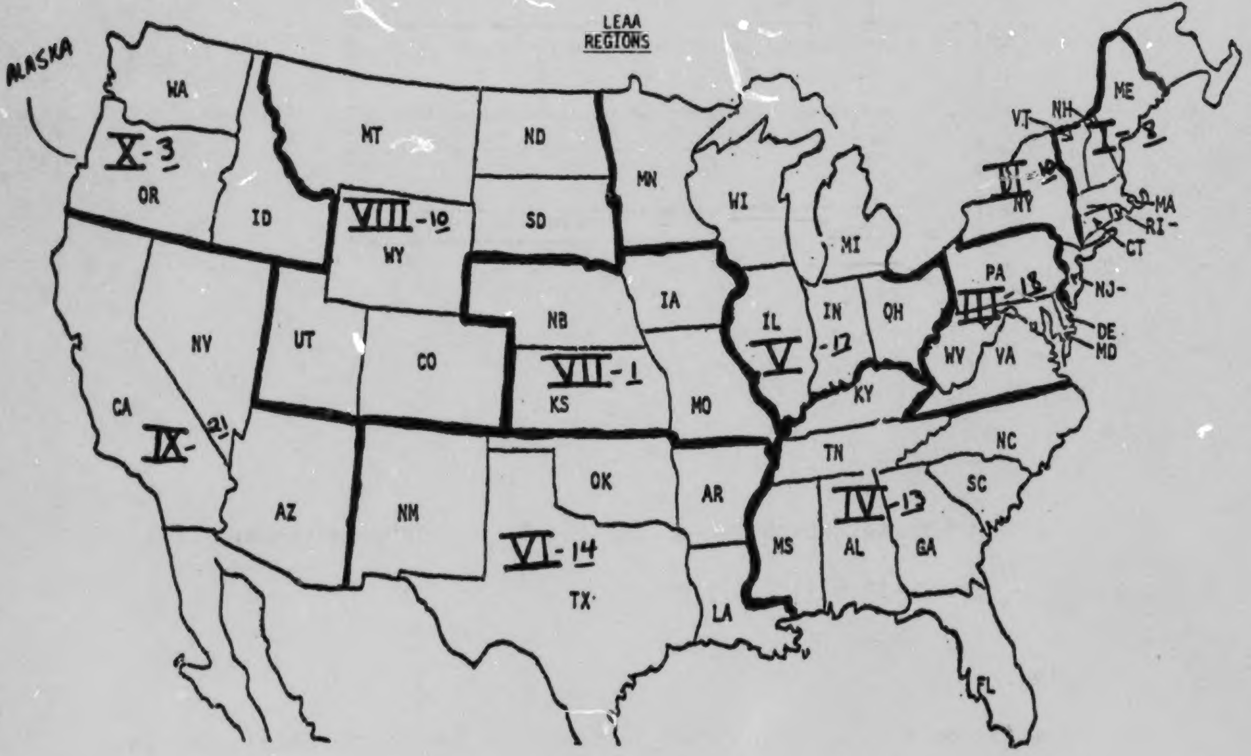

ALASKA
WA
X-3
OR
ID
MT
VIII-10
WY
ND
SD
MN
WI
MI
ME
VT
NH
I-8
II-10
NY
MA
RI-
CT
PA
III-18
NJ-
DE
MD
WV
VA
OH
IN
-17
IL
V
IA
NB
VII-1
KS
MO
KY
TN
NC
SC
IV-13
GA
AL
MS
AR
LA
FL
OK
VI-14
TX
NM
AZ
CO
UT
NV
CA
IX-21

TABLE IX-3

FORENSIC TOXICOLOGIST PROFILE*

EMPLOYMENT	NO.	SEX		HIGHEST LEVEL OF EDUCATION ATTAINED			AGE					YRS. EXPERIENCE				
				Some Coll.	Under Grad. Degree	Grad. Work	21-30	31-40	41-50	51-60	65+	1-5	6-10	11-20	21-30	30+
State	57	51	6	3	10	43	14	25	7	7	2	29	11	7	4	2
County	38	32	6	1	13	24	9	14	7	4	4	13	13	7	3	2
Municipal	11	10	1	0	2	9	2	5	3	0	1	4	5	1	0	1
Private	6	4	2	0	1	5	0	2	2	1	1	1	1	2	1	1
Federal	8	8	0	0	1	7	1	3	2	0	2	2	4	0	0	2
Others	3	3	0	0	0	3	0	0	2	0	1	0	1	0	0	2
Total	123	107	15	4	27	91	26	49	23	12	11	49	35	17	8	10

* Not all respondents answered all questions

20. QUESTION:

a. Is the laboratory part of a branch or satellite system?

☐ Yes ☐ No

b. If "yes", which laboratory is the main laboratory and which are the satellites? ______________________________ (Main)

______________________________ (Satellites)

Response:

- 27 Yes

  90 No

- Of those who answered "Yes" 20 laboratories were part of a state satellite system.

Finding:

- The greatest expansion in forensic toxicology facilities in the past five years has been in the state systems.

21. QUESTION:

Please indicate the agencies and individuals with whom you have dealt in the past year in the course of your Toxicology work?

☐ Police Departments
☐ Sheriff's Offices
☐ State Police
☐ Environmental Agencies
☐ Department of Agriculture
☐ FBI
☐ Other Federal Agencies
☐ Other Toxicology Labs
☐ Criminalistic Laboratories
☐ Disaster Squads
☐ Prosecutor's Office
☐ Defense
☐ Corrections
☐ Coroner's or Medical Examiner's Offices
☐ Forensic Pathologists
☐ Forensic Psychiatrists
☐ Forensic Odontologists/Anthropologists
☐ Toxicologists in private practice
☐ Health Agencies
☐ Educational Institutes
☐ Research Organizations
☐ Foreign Agencies
☐ Other (Specify) ____________

Response:

- During the past year the toxicologists dealt with other agencies as reported below.

105	-	Police department
88	-	Sheriff's office
81	-	State police
31	-	Environmental agency
12	-	Department of Agriculture
17	-	FBI
37	-	Other Federal agencies
77	-	Other toxicology labs
57	-	Criminalist labs
1	-	Disaster squads
85	-	Prosecutor's office
70	-	Defense
48	-	Prosecution
96	-	Coroner or Medical Examiner
84	-	Forensic pathologist
8	-	Forensic psychiatrist
5	-	Odontologist/anthropologist
38	-	Toxicologist private practice
60	-	Health agencies
54	-	Educational institutions
36	-	Research organizations
6	-	Foreign agencies

22. QUESTION:

Please indicate which of the following facilities and equipment are available to you:

Spectrometry
☐ Visible
☐ UV
☐ IR
☐ Raman

☐ NMR
☐ Mass Spec
☐ TLC

☐ GC
☐ GC/MS
☐ Fluorometer
☐ Atomic Absorption
☐ Reference Library
☐ Other ____________
____
____

Response:

- The following equipment was reported available:

113	Visible	
118	UV	
104	IR	
3	Raman	
30	NMR	
38	Mass Spec	
116	TLC	
116	GC	
44	GC/MS	
101	Fluorometer	
89	Atomic absorption	
85	Reference library	
47	Other	
	(14)	Immunoassays
	(9)	Emission Spectrography
	(6)	X-Ray Diffraction
	(5)	(Automated) Liquid Chromatography
	(3)	Microscope
	(22)	Polarograph

23. QUESTION:

How would you rate the following in your Toxicology organization?

	Outstanding	Good	Fair	Poor
Supporting Personnel	☐	☐	☐	☐
Physical Plant	☐	☐	☐	☐
Size of Work Load	☐	☐	☐	☐
Work Load	☐	☐	☐	☐
Instruments	☐	☐	☐	☐
Other Equipment	☐	☐	☐	☐
Supervision	☐	☐	☐	☐
Administrative Procedures	☐	☐	☐	☐
Laboratory Procedures	☐	☐	☐	☐
Library Facilities	☐	☐	☐	☐
Budget Adequacy	☐	☐	☐	☐
Personnel Policies	☐	☐	☐	☐

Response:

- General ratings of the laboratories follow:

	Outstanding	Good	Fair	Poor
Supporting personnel	35	59	17	11
Physical plant	24	51	36	12
Size of work load	23	54	23	15
Work load	21	54	25	10
Instruments	40	75	10	0
Other equipment	17	73	22	3
Supervision	27	52	22	8
Administrative procedures	13	46	40	15
Laboratory procedures	34	74	13	2
Library facilities	19	42	42	22
Budget adequacy	9	39	43	30
Personnel policies	15	49	33	21

- Ranked in the order of highest to lowest ratings:

Good

Instruments
Laboratory Procedures
Supporting Personnel
Work Load (Type)

Fair (High Range)

Other Equipment
Supervision
Work Load (Size)
Physical Plant

Fair (Mid Range)

Administrative Procedures
Personnel Policies
Library Facilities
Budget Adequacy

Response Analysis:

- Further query revealed that the majority of the low ratings for "Budget Adequacy" reflected a dissatisfaction with salary levels.
- In a separate query of 12 laboratories concerning the improvements they would make if the means were available, the following answers were given:

  9 of 12 laboratories desired more space

  6 of 12 would acquire a GC/MS

  3 of 12 would automate/computerize their operations and management

  3 of 12 would hire more professionals

  3 of 12 would increase salaries

Findings:

- Whereas laboratory operations and facilities are considered to be adequate, forensic toxicologists are relatively less satisfied with administrative procedures and personnel policies in their organizations.
- Library facilities are deemed only fair in most forensic toxicology laboratories.

24. QUESTION:

If you are not a full time employee of a Toxicology laboratory or of a Forensic science related agency, how are you paid for your Forensic Toxicology laboratory services?

☐ **Fixed Salary**
☐ **Fee-For-Service**
☐ **Hourly Wage**
☐ **Other (Specify)** ____________________

Response:

- Of the 31 part-time employees the following pay plans were cited:

  23 - Fixed Salary
  3 - Fee-For-Service
  1 - Hourly
  4 - Other
  Consultants (No Fee)

25. QUESTION:

What can be done to raise the level of understanding and acceptance of Toxicologists by these groups?

Response:

- Common topics presented:
  - Seminars and workshops for consumers of forensic toxicology services
  - Audio/video material to cover the state-of-the-art -- to include the limitations of the laboratory
  - Short information programs for senior personnel in "user" agencies
  - Wider general publicity on forensic toxicology.

Finding:

- In general, the forensic toxicologist does not feel that the average consumer of his services understands the capabilities and limitations of forensic toxicology and of his laboratory, in particular.

26. QUESTION:

a. Are your meetings with counsel adequate to prepare you for court presentations

☐ Yes ☐ No

b. If "no", in what ways can this be improved?

Response:

- a. 73 - Yes

  23 - No

- b. Of those who answered "No" the following observations were made:

  Joint meetings should develop the basic practice that should apply in the courtroom.

  Meetings should be held earlier and last longer so that all issues can be discussed.

  District attorneys should have a larger staff of individuals familiar with the forensic sciences.

27. QUESTION:

> a. Do you feel that you can adequately convey your findings to the court?
>
> ☐ Yes ☐ No
>
> b. If "no", how might this be corrected? ________________
> ____

Response:

- 105 - Yes

  8 - No

28. QUESTION:

> a. Please indicate briefly what you believe should be the minimum standards for *education, training, and experience* for individuals entering your Forensic specialty.
>
> ____

Response:

- Education

  95 - BS in one of the Physical Sciences

  14 - MS

  11 - PhD

- Specific Courses

  Of the 25 who indicated specific courses, only three cited specific forensic science courses.

29. QUESTION:

In your field what areas (management, training, technical, etc.) are most in need of research?

Response:

- Common research areas included:

  Heavy metal methodology

  Automation

  Interpretation of data

  Drug Analysis

  Quality Control

  Extraction Procedures

  Resins

  Correlation of drug and alcohol levels to impairment of ability

30. QUESTION: **What, in your opinion, can be done to improve the quality of work performed by others in the field of Forensic Toxicology?**

Response:

- 31 - Quality control programs along with proficiency testing programs

  12 - Certification with minimum standards of academic and professional qualifications

  11 - Need for reference laboratories

  11 - More communication

  10 - Continuing on-the-job training and continuing education

  7 - Workshops/seminars

  7 - Exchange of procedures and ideas among labs

  30 - Others:

  Research in the chemical analysis of drugs.

  Accuracy in lab data interpretation.

  Courtroom procedure training.

- Seminars to train the "teachers" (selection of topics, how to organize, how to present, training aids.)

Findings:

- Forensic toxicologists believe that quality control programs and proficiency testing, designed for their services, should be implemented.
- Certification is needed
- Greater educational opportunities are needed
- Regular communications should be established for the exchange of ideas and for consumer benefit.
- Reference laboratories are needed in the USA -- at least on a regional basis.

CHAPTER X

QUESTIONED DOCUMENT/EXAMINER

DEFINITION

A questioned document examiner/document analyst is one concerned with the examination of all physical features of documents. He makes critical examinations, comparisons and analysis of documents: to establish genuineness or to expose forgery or to reveal alterations, additions or deletions; to identify persons through documents or parts of documents, by showing the authorship of handwriting or the source of typewriting; to aid in fixing liability or culpability for any kind of fraud that makes use of documents, and generally to help protect the integrity of documents. Typically, the development and comparison of latent fingerprints is not normally accomplished. However, some document examiners include this in select cases. Questions about documents arise in business, finance, civil and criminal trials, or in any matter affected by the integrity of written communications and records.

SURVEY BACKGROUND

The material to follow is the product of a survey taken in 1974-1975. The questionnaire was mailed to the membership of the Questioned Document Section of the American Academy of Forensic Sciences, the American Society of Questioned Document Examiners, to a sampling of the membership of the Independent Association of Questioned Document Examiners, plus independent examiners who expressed a desire to be included in the survey.

Responses are as follows:

Questionnaires Mailed	Responses	% of Response
410	128	31%

As evident from the answers to specific questions that follow, the above responses are considered to be a representative sample of those who testify in various courts as expert witnesses in this field--with one exception. In the greater Washington, D.C. area (wherein the responses represented 17% of the total response) only 1 of 16 examiners who had all of the following characteristics responded: 1) 40 years of age or older; 2) no college degree; 3) had more than 10 years of experience.

FINDINGS

- The respondents tend to fit into one of two categories:

  Those who serve as expert witnesses almost exclusively in the areas of handwriting and disputed signatures and those who are expert witnesses in handwriting identification plus several other areas such as: paper, documents, machines, ink, etc.)
- There appear to be no degreed programs in the field of questioned document examination.
- There exists a paucity of comprehensive educational opportunities nation wide in the field of questioned document examination.
- The major reliance for education and training in questioned document work is placed in on-the-job training--which was rated excellent.
- The quality of continuing education and seminars/workshop is generally lower than other forms of education/training.
- The members, whose societies require more stringent entrance standards, appear to be older, to have a higher level of education, higher salary, and more years of experience.
- Most questioned document examiners do not support their discipline by publications.
- People in age groups 20-30 are not entering the questioned document examiners field.
- The survey team failed to convince the non-degreed document examiners in the greater Washington, D.C. area to submit their questionnaires.

- 78% of the respondents work part or full time for government agencies.
- Only in rare cases do document examiners gather case evidence.
- As would be expected, relatively more time is spent analyzing cases than on any other functional activity performed by a document examiner (gather evidence, analysis, testify, give expert opinion, etc.).
- The Questioned Document Examiner appears to be involved in all aspects of the justice system.
- Questioned document examination is predominantly prosecution oriented.
- Attorneys should be schooled in the proper employment of questioned document examiners in their cases.
- Greater use should be made of well conceived "Prompt Sheets" or check lists as an aid to trial lawyers.
- The most common questioned document court work is concerned with disputed handwriting and signatures. Next is altered documents.
- In addition to handwriting and signature matters most Questioned Document Examiners testify in several other analytical areas germane to document examination (typewriting, stamps, ink, paper, altered documents, etc.).
- 62% of the 128 respondents feel that a college degree represents a minimum standard of education for a questioned document examiner.

- A total of 103 respondents (80% of the total respondents) feel that compulsory on-the-job-training, in addition to a college education, should be a minimum standard in questioned document work. Of those 70% cited 2-3 years as the minimum length for O-J-T.
- The responses were inconclusive concerning the need for experience (apprenticeship).
- There is no regular, official means of communication between the questioned document examination profession and such "users" of the available service as; police, trial lawyers and courts.
- There appears to be a shortage of document examiners in LEAA Region V - particularly in Illinois and Ohio.
- Within the several subspecialties of document analysis most respondents indicated a need for standard reference files and for computer assistance in their analytic work.
- Questioned Document Examiners desire a program of certification/recertification to include: minimum standards, periodic examinations, continuing education and a Code of Ethics.
- An intra-professional "state-of-the-art" publication is needed for the dissemination of scientific advances in the field.

RECOMMENDATIONS

- The means of entry to full-time employment as a questioned document examiner should be expanded from the current training and experience qualification by creating a model curriculum that will lead to a degree in "forensic sciences" with a major in Questioned Document Examination. Realistically, the development of such a program would proceed from the design of several "electives" in questioned document subject areas--through the design of a "minor" in questioned document examination--to the implementation of a "major" course of study.
- Standards and an accompanying certification and recertification program are urgently needed.
- A program of education and orientation should be designed for the consumer of questioned document examinations. Ideally, an audio/video package should be prepared.
- Independent of the orientation program, regular communications should be established with law enforcement agencies, trial lawyers and the courts as a means to keep them informed of: 1) the state-of-the-art in questioned document work; 2) recommended criteria for use in evaluating the qualifications of individuals purported to be experts in the field--in context with the current state-of-the-art; 3) known experts in the field.
- Research is needed to develop standard reference files.

- There is a need for an in-depth study of the title "Questioned Document Examiner". Over the years the title has evolved into one that identifies individuals with widely varying levels of qualification, i.e., those who perform only handwriting and closely related analyses and those who are competent in several areas of questioned document work. The implementation of a certification program and the subsequent use of a title such as "Certified Questioned Document Examiner" will not resolve this particular matter since two or more different certification programs are now in being or are being implemented.
- A study should be made of the need for a career program in questioned document examination, to include: standardized entry and promotion qualifications; common job titles and descriptions; a promotion ladder; lateral transfer, etc.

1. **QUESTION:**

> Do you have a particular specialty in the field of Questioned Document examination?
>
> ☐ Yes ☐ No
>
> If "yes", please describe: ______________________________
> ______________________________
> ______________________________

Response:

- 30 Yes

  90 No

- Of those who stated that they had a specialty (answered "Yes") the vast majority cited "Handwriting". This is corroborated by the responses to Question 20, which follows.

Findings:

- The respondents tend to fit into one of two categories: those who serve as expert witnesses, almost exclusively, in the areas of handwriting and disputed signatures and those who are expert witnesses in handwriting identification plus several other areas such as: paper, documents, machines, ink, etc.

2. **QUESTION:**

Please describe your formal education:

High School or College	Diploma/ Degree	Major	Years

Response:

- The highest level of formal education attained:

12	High school graduate
37	Some college
50	Undergraduate degree
28	Some graduate work

- Of those with degrees the following distribution was indicated of the more common degrees:

19	BA
31	BS
9	MA
17	MS
2	Ph.D.

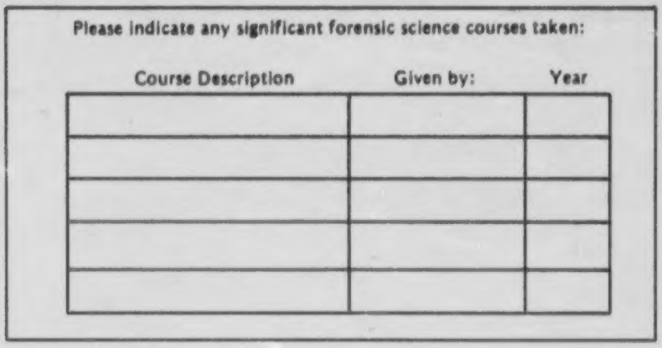
Response Analysis:

- Of those holding bachelor's degrees, 16 of the 50 are in the physical sciences with a relationship to forensic science. And 1 is in forensic science.
- Of those holding master's degrees, 9 of the 26 are in the forensic sciences and 3 are in related physical sciences.
- Of those with degrees, 25 hold 2 or more.

Findings:

- There appear to be no degreed programs in questioned document examination.

3. QUESTION:



Please indicate any significant forensic science courses taken:

Course Description	Given by:	Year

Response

- 80 individuals responded to this question.
- The most commonly cited question document examination related courses are: questioned document examination; typewriters; document photography and criminalistics.
- The courses were most frequently presented by: Georgetown University; U.S. Department of Treasury, Secret Service; Federal Bureau of Investigation; and George Washington University.

Response Analysis

- With the exception of one or two cases, the courses cited are not considered to be sufficient to qualify an individual in any document examination specialty. Rather, the course offerings are "introductory" in nature. Unfortunately, not all students are aware of this--or they or their superiors refuse to accept the restricted value of the courses.

Findings

- There exists a paucity of comprehensive educational opportunities nationwide in the field of questioned document examination.

4. QUESTION:

Would you please provide an overall evaluation of your forensic education and training (as applicable):

	Excellent	Good	Average	Poor
Formal Education	☐	☐	☐	☐
On-the-Job Training	☐	☐	☐	☐
Continuing Education	☐	☐	☐	☐
Seminars and Workshops	☐	☐	☐	☐

Response:

-

	Rating			
Course	Excellent	Good	Average	Poor
Formal education	36	32	29	6
On-the-job training	75	31	11	5
Continuing education	29	44	19	12
Seminars/workshops	29	42	19	19

Response Analysis:

- The response figures shown above include ratings from individuals who, in previous questions, indicated no formal education. Eliminating those responses revises the rating for formal education as follows:

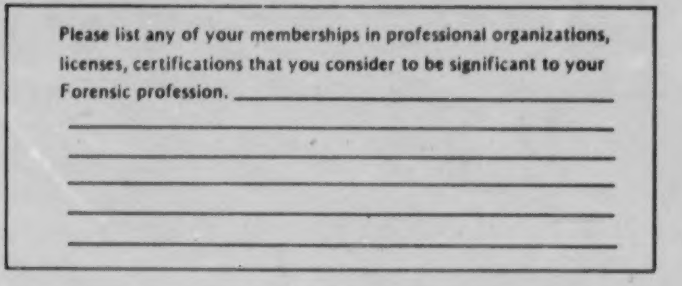
	Excellent	Good	Average	Poor
Formal Education	30	23	18	3

Findings:

- The major reliance for education and training in questioned document work is placed in on-the-job training -- which was rated excellent.

- The quality of continuing education and seminars/workshop is generally lower than other forms of education/training.

5. QUESTION:



Please list any of your memberships in professional organizations, licenses, certifications that you consider to be significant to your Forensic profession. ______

Response:

- See Table X-1, Profile of Memberships in Professional Organizations, for a tabulation of memberships cited, together with a profile of the respondents. The survey failed to confirm that the indicated salaries were wholly from questioned document examination work.
- See Table X-2, for a comparison of membership qualifications for selected organizations.

Findings:

- The members, whose societies require more stringent entrance standards, appear to be older, to have a higher level of education, higher salary, and more years experience.

TABLE X-1

PROFILE OF

MEMBERSHIPS IN PROFESSIONAL ORGANIZATIONS

	Nr.	Age						Education				Salary Range						Yrs. Exp.				
		-20	21-30	31-40	41-50	51-65	65+	HS	Under Grad.	BA/BS	Grad. Work	3-10	11-15	16-20	21-25	26-30	30+	1-5	6-10	11-20	21-30	30+
AAFS & (ASQDE)	58	0	3	6 Av.	14 Age	26 51	5	1 Approx	15 . 71%	22 have	18 degrees	0 Av.	6 Sal.	4 $22,00	4	4	6	4	7 Av.	18 19.3	16	12
IAI	42	0	2	6 Av.	9 Age	17 51	6	5 Approx.	18 45%	9 degrees	10	2 Av.	7 Sal.	2 $16,50	2	0	2	7	5 Av.	10 17.7	8	10
OTHERS (IAQDE, Regional Organizations, etc.)	55	0	5	11 Av.	14 Age	18 42	6	5 Approx.	21 54%	15 degrees	15	2 Av.	10 Sal.	6 $13,00	3	0	2	14	11 Av.	11 15	8	11
None or N/A	24	0	3	9 Av.	5 Age	6 43	1	3 Approx.	7 60%	9 degrees	5	3 Av.	6 Sal.	3 $13,00	0	0	0	9	3 Av.	5 12.4	4	2

TABLE X-2

COMPARISON OF ORGANIZATION QUALIFICATIONS

ORGANIZATION	Education/Examination	Experience	Court Experience		Code of Ethics	Present Research
A.A.F.S.	Bachelor's Degree	4 years	yes		Provision For	—
A.S.Q.D.E. Associate	Bachelor's Degree	3 yrs. Internship or 6 yrs. work	yes		yes	At least one at each ASQDE Mtg.
Regular all of above for 2 yrs. plus.	Written exam on all facts of QD. Practical Prob. solg. Oral exam.					
I.A.I.	—	Must be employed by government	—		—	—
I.A.Q.D.E.	Pass written examination on assigned text.	2 yrs.	yes			
Probationary	Pass written examination on assigned text.	—	—		—	—

6. **QUESTION:**

> List any of your publications (*in your Forensic specialty*) for the years 1972-74 that you consider significant. Include title, journal, volume and date. (Attach a separate sheet if necessary.)
>
> 1. ________________________________
>
> ________________________________
>
> 2. ________________________________

Response:

- 47 publications were reported by 29 respondents.

- Common subjects included:
  - Handwriting
  - Law & Law Enforcement
  - Forgery
  - Identification
  - Typewriters
  - Autopen
  - Paper
  - Ink
  - Plate Design
  - Professionalism in Document Examination

Findings:

- Most questioned document examiners do not support their discipline by publication.

7. **QUESTION:**

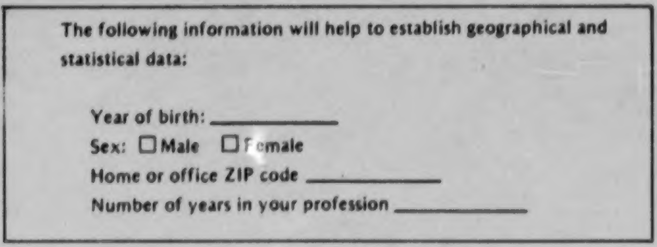
> Please indicate any teaching positions or faculty appointments which pertain to your Forensic work:
>
> 1. ________________________________
>
> ________________________________
>
> 2. ________________________________

Response:

- Approximately 40% of the respondents indicated that they served part time as faculty members, instructors or guest lecturers at universities, community colleges and law enforcement academies.

- The majority taught at community colleges with the next most frequent being police science courses.

8. **QUESTION:**



The following information will help to establish geographical and statistical data:

Year of birth: __________
Sex: ☐ Male ☐ Female
Home or office ZIP code __________
Number of years in your profession __________

Response:

- The mean year of birth of the respondents was 1930.

Age	Number of Respondents
-20	0
21-30	16
31-40	25
41-50	33
51-65	46
65+	8

- 120 Male
  8 Female

- See Map X-1 , for geographic distribution of respondents.

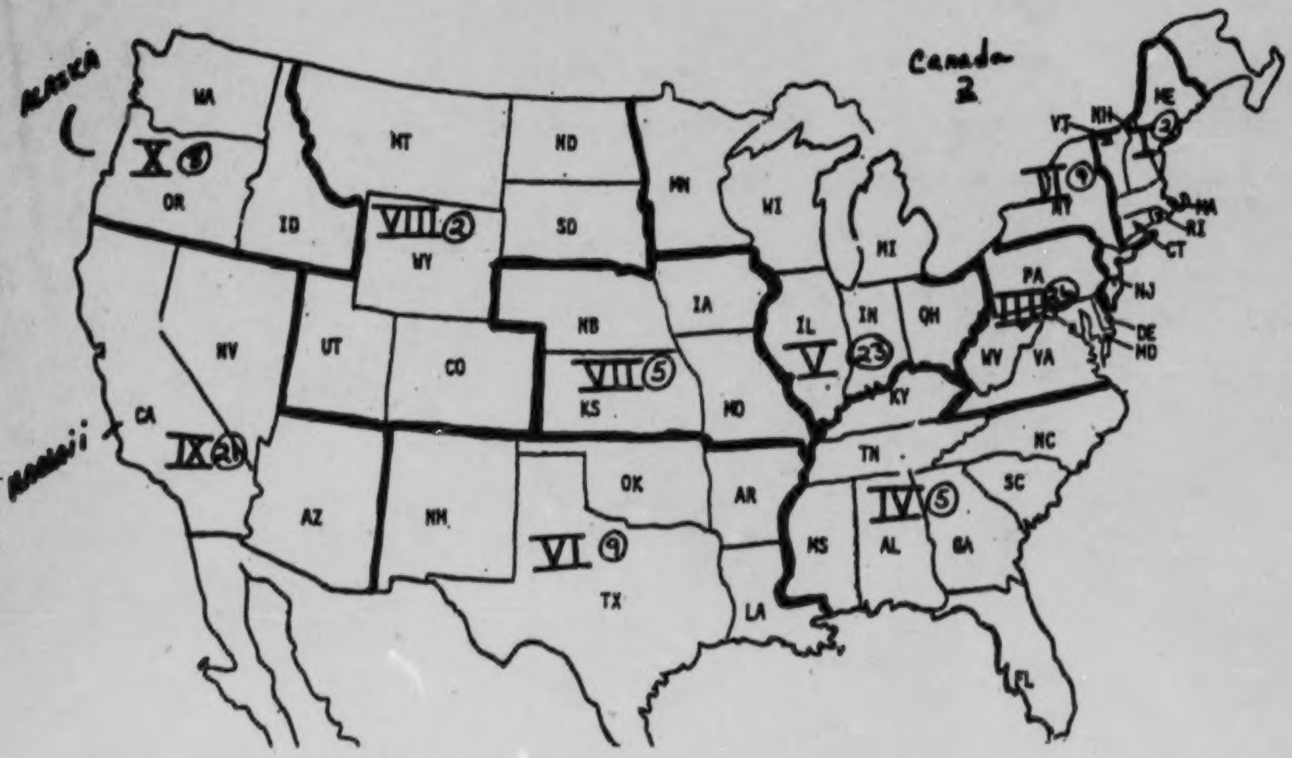
- No. of years in profession.

Years of Experience	Number of Respondents
1 - 5 years	32
6 - 10 years	21
11 - 20 years	29
21 - 30 years	25
30+	21

MAP X-1

Distribution of Questioned Documents Examiners

by
LEAA
REGIONS


ALASKA
WA
X
OR
ID
MT
ND
SD
VIII
2
WY
MN
WI
MI
Canada
2
VT
NH
ME
2
II
9
NY
MA
RI
CT
PA
III
NJ
DE
MD
WV
VA
IA
IL
IN
OH
V
23
NB
VII
5
KS
UT
CO
NV
CA
Hawaii
IX
MO
KY
TN
NC
SC
IV
5
GA
AL
MS
AR
OK
AZ
NM
VI
9
TX
LA
FL

Response Analysis:

- In an effort to ascertain whether or not people in the age groups 20-40 either failed to return questionnaires or that there are few young people entering the profession, an analysis was made of the known questioned document examiner population in the greater Washington, D.C. area. 85 document examiners were identified on the basis of age, education, and years of experience.

  Following is a distribution of the 85 in terms of age. Also shown is the companion national response rate.

Age Group	% of WDC QDE Population	% National Response
20-29	10%	12.5%
30-39	25%	19.5%
40-49	25%	25.8%
50-65	33%	35.9%
65+	6%	6%

The Washington rate of response was 28%. Of the 20-29 age group 38% responded.

- Next, an analysis was made of the known document examiners in the greater Washington, D.C. area to see if any identifiable group failed to support the survey.

  It was found that of a total of 16 examiners over 40 years of age who do not have a college degree, but who have more than 10 years experience, each, only 1 responded!

Regardless of age and experience, only 12% of the non-depth examiners in the Washington area responded

Further discussions with several of these individuals revealed that they distrusted the survey. They felt that it would establish standards that they could not meet. Efforts to convince them otherwise obviously failed.

It was impossible to make a similar study of the national response.

Findings:

- People in age groups 20-30 are not entering the questioned document examiners field.
- The survey team failed to convince the nondegreed examiners in the greater Washington, D.C. area to submit their questionnaires.

TABLE X-3

QUESTION DOCUMENT EXAMINER PROFILE ACCORDING TO EMPLOYMENT*

Employment	Nr.	Sex		Education				Age						Yrs. of Exp.					Salary Range					
		M	F	H.S.	Some Coll.	Under Grad. Degree	Grad. Work	-20	21-30	31-40	41-50	51-65	65+	1-5	6-10	11-20	21-30	30+	5-10	11-15	16-20	21-25	26-30	30+
Private	35	27	5	5	9	13	8	0	0	0	4	21	6	2	2	5	8	14	2	2	0	1	3	1
Federal	30	30	0	0	9	9	12	0	3	10	8	9	0	8	8	4	8	2	0	4	5	7	8	4
State	32	30	2	4	10	13	5	0	7	8	11	10	1	14	5	7	6	3	0	13	13	2	2	0
Local (include County & Regional)	31	30	1	3	9	15	3	0	6	7	10	6	1	8	6	13	3	2	3	8	10	2	1	1

* Not all respondents answered all questions.

9. **QUESTION:**

Which of the following describe your employment?
(Check all appropriate)

☐ Self employed
☐ Work for a private firm
☐ Employed by a government agency
    ☐ Federal
    ☐ State
    ☐ Regional   ☐ Civilian
    ☐ County   ☐ Sworn
    ☐ Local

Response:

- 35 Self employed or work for private firm
  - of these, 8 also work for gov't
    - 0 Federal
    - 4 State
    - 1 County
    - 3 Local
  - 27 only employment
- * 92 Employed by the government
  - 30 Federal
  - 32 State
  - 30 Local (including Regional & County)

* 2 indicated working for more than one government agency.

- See Table X-3, Profile according to employment.

Response Analysis:

- 13 Civilian

  18 Sworn

- The response to the question pertaining to Civilian-Sworn is considered to be inconclusive.

Findings:

- 78% of the respondents work part or full time for government agencies.

10. QUESTION:

Which of the following describe your job?
(Check all appropriate)

☐ Administrator
☐ Supervisor
☐ Bench Worker
☐ Researcher
☐ Instructor
☐ Other (Specify)____________________

Response:

- 27 Administrator

  45 Supervisor

  74 Bench Worker

  25 Researcher

- As previously reported approximately 40% of the respondents indicated that they served as part time faculty members, instructors or guest lecturers.

11. **QUESTION:**

Please indicate what percentage of your time per year is spent on the following:

%
A ____ Gather case evidence
B ____ Analyze case evidence
C ____ Testify or present evidence
D ____ Give expert opinion
E ____ Directly manage or supervise aforementioned tasks

Response:

- % Time / Number responses by TASK

% Time	A	B	C	D	E
0 - 9%	107	13	73	61	72
10 - 19%	7	8	32	34	23
20 - 29%	3	7	13	9	7
30 - 39%	1	7	3	4	3
40 - 59%	1	20	0	2	3
60 - 69%	0	11	0	2	3
70 - 79%	1	17	0	1	4
80 - 89%	0	20	1	4	1
90 - 100%	2	21	1	7	5

Findings:

- Only in rare cases do document examiners gather case evidence.
- As would be expected, relatively more time is spent on analyzing cases, than any other functional activity performed by a document examiner (gathering evidence, analysis, testify, give expert opinion, etc.).

12. **QUESTION:**

If you are employed by an agency, but you have an additional private practice, are there restrictions placed on this practice?

☐ Yes ☐ No

If "yes", please indicate the nature of these restrictions.

☐ Time limit
☐ Derived income limit
☐ Geographic restrictions (e.g. must be out of state or county)
☐ Others (Specify) ______________________

Response:

- 26 Yes

  7 No

- Of those responding "Yes":

  16 Time Limitation

  0 Derived income limit

  1 Geographical restrictions

- Other restrictions included:

  8 Conflict of interest

  7 No criminal cases

Response Analysis:

- Approximately 20% of the respondents reported that they work for agencies and are allowed to handle outside casework.

13. **QUESTION:**

> **Please indicate the agencies/organizations with whom you deal in the course of your current employment.**
>
> ☐ **Law Enforcement**
> ☐ **Prosecution**
> ☐ **Defense**
> ☐ **Courts**
> ☐ **Corrections**
> ☐ **Press**
> ☐ **Insurance Companies**
> ☐ **Other**______________________________

Response:

113	Law enforcement
119	Prosecution
96	Defense
112	Courts
36	Corrections
24	Press
39	Insurance companies

Findings:

- The Questioned Document Examiner appears to be involved in all aspects of the justice system.

14. QUESTION:

Do you handle cases in any geographic area (states, countries) other than your primary place of employment?

☐ **Yes** ☐ **No**

If "yes", how many per year? ____________________

Response:

- 76 Yes

  44 No

15. QUESTION:

Approximately what percentage of your cases are criminal cases?

______ %

Response:

- % Criminal Cases / Number of Respondents

% Criminal Cases	Number of Respondents
0 - 9	6
10 - 19	7
20 - 29	8
30 - 39	0
40 - 59	6
60 - 69	0
70 - 79	3
80 - 89	3
90 - 100	85

- On the average, approximately 80% of the cases handled were criminal cases.

16. **QUESTION:**

Approximately how many times have you testified as an expert witness?

________1969 ________1972
________1970 ________1973
________1971 ________1974

Response:

Number of times Testified	1969	1970	1971	1972	1973	1974
0 - 5	23	18	18	28	28	37
6 - 10	10	14	13	11	19	20
11 - 15	14	17	16	15	12	13
16 - 20	6	3	8	9	9	6
21 - 30	4	8	7	9	11	6
31 - 40	5	4	6	4	5	5
41 - 50	4	4	5	5	5	6
51 - 100	2	3	2	4	5	1
Over 100	4	4	5	5	4	6

- 99 respondents (77% of the total) indicated that they appeared as expert witnesses in courts during the period 1969-1974.

- Although the mean number of appearances as an expert witness was approximately fifteen for each reported year, the greatest frequency consistently occurred in the range between 1 and 5 cases per year.

17. QUESTION:

The percent of the time you work for the prosecution is:

_______%

For the defense:

_______%

Response:

- 74% of the 128 total respondents work for the prosecution. 20% indicated that they did some work for the defense (not all respondents answered this question).

Findings:

- Questioned document examination is predominantly prosecution oriented.

18. QUESTION:

Are your meetings with counsel adequate to prepare you for court presentation?

☐ Yes ☐ No

If "no", how might this be improved?____________________________

Response:

- 78 Yes
  33 No
- Of those who answered "No" the most commonly mentioned means of improvement was to educate attorneys in how to examine expert witnesses and how to present expert testimony in court. Implicit in this response was the knowledge that district attorney offices are understaffed--resulting in minimum time for case preparation.

Response Analysis:

- Further query revealed that of those who responded "No," few had ever offered a Q.D. Prompt Sheet or Check List to the attorney in charge of their case.

Findings:

- Attorneys should be schooled in the proper employment of questioned document examiners in their cases.
- Greater use should be made of well conceived "Prompt Sheets" check lists as an aid to trial lawyers.

Number of Respondents	Number of Areas (from above list) In Which They Have Testified
3	1 area
18	2 area
5	3 area
7	4 area
8	5 area
13	6 area
8	7 area
5	8 area
12	9 area
42	10 area
Total 121	

- Those who indicated that they testified in from 1 to 4 of the above noted areas, generally cited handwriting, signatures, typewriting, and altered documents.
- Those indicating 5 to 7 areas, generally cited the above plus stamps, ink, paper or others.
- Those indicating 8 or more areas generally cited the above plus at least one from each of "Documents" and "Machines".

Findings:

- The most common questioned document court work is concerned with disputed handwriting and signatures. Next is altered documents.

- In addition to handwriting and signature matters most Questioned Document Examiners testify in several other analytical areas germane to document examination (typewriting, stamps, ink, paper, altered documents, etc.).

19. **QUESTION:**

Do you feel that you can adequately convey your evidence to the court and/or jury?

☐ Yes ☐ No

If "no", how might this be corrected? ____________

Response:

- 114 Yes
  11 No

- Those who responded "No" indicated that their major problems stemmed from inadequately prepared or trained attorneys.

20. **QUESTION:**

Please indicate if you have testified regarding:

☐ Disputed handwriting/printing
☐ Signatures
☐ Typewriting
☐ Checkprotectors
☐ Altered documents
☐ Age of documents
☐ Charred documents
☐ Copy machines
☐ Adding machines
☐ Stamps (rubber, time, etc.)
☐ Paper
☑ Ink
☐ Others (specify) ____________

Response

117	Disputed handwriting	50	Charred documents
117	Signatures	54	Copy machines
88	Typewriting	40	Adding machines
60	Checkprotectors	66	Stamps (rubber, etc.)
96	Altered documents	57	Paper
54	Age of documents	65	Ink

- The following is the distribution of respondents in terms of the number of the above areas in which they have testified.

21. **QUESTION:**

> **Please indicate briefly what you believe should be the minimum standards for *education, training and experience* for individuals in your forensic specialty.**

Response:

• College (Baccalaureate)	Training Level	Experience
62 Respondents	1 yr - 2	10 yrs - 1
	2-3 yrs - 48	2 yrs - 2
	4 yrs - 8	3 yrs - 2
	5 yrs - 4	5 yrs - 1

No College	Training Level	Experience
28 Respondents	1 yr - 4	10 yrs - 1
	2-3 yrs - 20	2 yrs - 1
	4 yrs - 1	None
	5 yrs - 2	None
	None	3 yrs - 1

Training, Only	
14 Respondents	1 yr - 3
	2 yrs - 4
	3 yrs - 4
	4 yrs - 1
	2 unspecified time

College Degree, Only

6 Respondents

Findings:

- 62% of the 128 respondents feel that a college degree represents a minimum standard of education for a questioned document examiner.
- A total of 103 respondents (80% of the total respondents) feel that compulsory on-the-job-training, in addition to a college education, should be a minimum standard in questioned document work. Of those, 70% cited 2-3 years as the minimum length for O-J-T.
- The responses were inconclusive concerning the need for experience (apprenticeship).

22. QUESTION: What can be done to raise the level of understanding and acceptance of your forensic profession by these groups?

Response:

72	Better communications with users of Questioned Document Examination products; also better intra-professional communications.
53	Education and Training
12	Certification/licensure
12	Code of Ethics
10	Standards

Findings:

- There is no regular, official means of communication between the questioned document examination profession and such "users" of the available service as: police, trial lawyers, and courts.

23. QUESTION:

Are there a sufficient number of Questioned Document examiners in your particular geographic area?

☐ Yes ☐ No

Response:

- Fifty-eight percent (58%) felt that their particular geographic area had a sufficient number of Questioned Document Examiners.
- See Map X-2 - Distribution of No responses by LEAA Regions.

Findings:

- There appears to be a shortage of document examiners in LEAA Region V -- particularly in Illinois and Ohio.

24. QUESTION:

If you engage in private consulting, have you been forced to turn down a request for your forensic services?

☐ Yes ☐ No

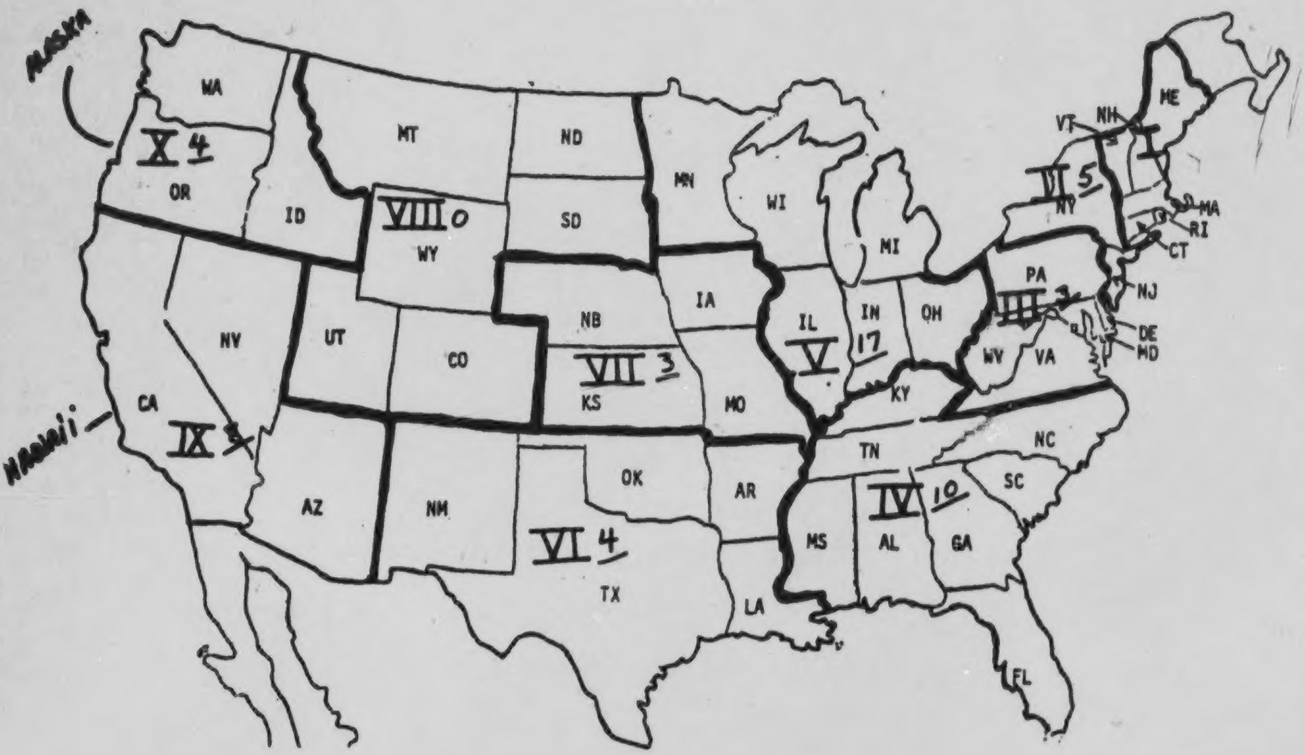
If "yes", why? ____________________

Response:

- 36 Yes
- Of those who answered "Yes", by far the most prevalent reason given was, "conflict of interest".
- The second most common reason was, "too busy".

MAP X-2

Distribution of No Responses by LEAA REGIONS


ALASKA
WA
X 4
OR
ID
MT
ND
VIII 0
WY
SD
MN
WI
MI
VT
NH
ME
I 3
II 5
NY
MA
RI
CT
PA
NJ
III 3
DE
MD
WV
VA
IA
IL
V
IN
17
OH
KY
NB
VII 3
KS
MO
NV
UT
CO
CA
HAWAII
IX 9
AZ
NM
OK
AR
TN
NC
SC
IV 10
MS
AL
GA
VI 4
TX
LA
FL

25. **QUESTION:** In what areas of Questioned Document examination is research most needed? ________________

Response:

- 91 Indicated need for research
- The most common cited were:

  Handwriting (statistical analysis of the frequency of occurence and the resultant probabilities, foreign)

  Inks (age, ballpoint ink age, non-dye components).

  Paper (age, reference standards).

  Machines (foreign typewriters reference standards, autopen characteristics, copying machines).

  Documents (age references, alteration determination).

  Education (curriculum planning).

Findings:

- Within the several subspecialties of document analysis most respondents indicated a need for standard reference files and for computer assistance in their analytic work.

26. **QUESTION:**

What can be done to improve the quality of work done by others in your profession?

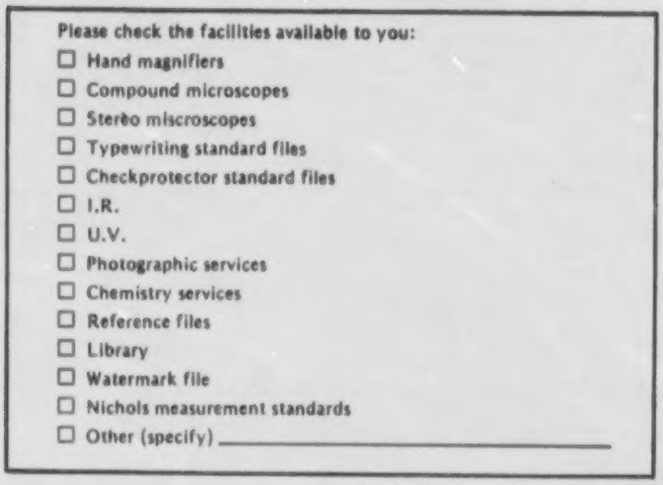
Response:

- Establish minimum qualifications that are known to and acknowledged by courts.
- Institute certification (examination)
- Education/Training
    - Design formal education curriculum
    - Conduct specialized continuing education
    - Seminars
    - Standardize on-the-job training
- Establish an intra-profession means of regular communication.
- Establish a universal Code of Ethics.

Findings:

- Questioned Document Examiners desire a program of certification/recertification, to include: minimum standards; periodic examinations; continuing education; and a Code of Ethics.
- An intra-professional "state-of-the-art" publication is needed for the dissemination of scientific advances in the field.

27. QUESTION:



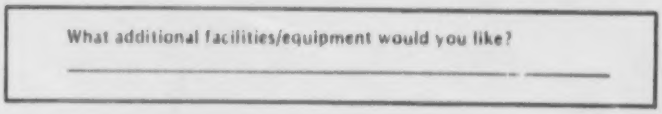
Please check the facilities available to you:

☐ Hand magnifiers
☐ Compound microscopes
☐ Sterèo miscroscopes
☐ Typewriting standard files
☐ Checkprotector standard files
☐ I.R.
☐ U.V.
☐ Photographic services
☐ Chemistry services
☐ Reference files
☐ Library
☐ Watermark file
☐ Nichols measurement standards
☐ Other (specify) ____________________

Response:

- 125 Hand magnifiers
  100 Compound microscopes
  115 Stereo microscopes
  99 Typewriter standard files
  56 Checkprotector standard files
  108 I. R. equipment
  115 U. V. equipment
  122 Photographic services
  101 Chemistry services
  102 Reference files
  105 Library
  52 Watermark file
  73 Nichols measured standard

28. QUESTION:



What additional facilities/equipment would you like?

____

Response:

- The most common needs reported were:

  Microscopes

  IR equipment

  Nichols measurement standards

  Typewriter standard files

  Access to computer

  Dark room

  General reference files

CHAPTER XI

EVIDENCE TECHNICIAN

DEFINITION

The Evidence Technician is a specialist trained to search for, collect, identify, record, and preserve physical evidence recovered by him at a crime scene. As such, he is trained not only to seek, identify, and recover physical evidence per se, but to do so in the context of a logical reconstruction of the incidents associated with the crime. His job includes the taking of photographs and measurements at the crime scene. He initiates procedures related to the "chain of evidence" and submits the physical evidence and information to the supporting scientific laboratory and to the investigative arm of the agency. He appears in court as an expert witness relative to the above activities.

The material to follow is a product of a survey taken in 1974-1975.

The Responses are as follows:

Questionnaires Mailed	Responses	% Response
1070 (788)*	156	15% (20%)*

* See next paragraph for justification of revised data.

SURVEY BACKGROUND

At the start of the program a literature search was conducted to ascertain the availability of a list(s) of law enforcement agencies that had formal evidence technician programs. No such list was uncovered. It was then decided to use a stratified random sample developed at the National Bureau of Standards as our mailing list. That sample included 535 agencies distributed throughout the 10 LEAA Regions in the United States. See Map XI-1 for agencies per LEAA Region.

The agency totals used in the sample were as follows:

State Police/Agencies	- 56
County Sheriffs/Police	- 100
Cities with 1-9 officers	- 99
Cities with 10-49 officers	- 98
Cities with 50+ officers (excluding 50 largest cities)	- 97
50 largest cities	- 45
Townships	- 40
Total	535

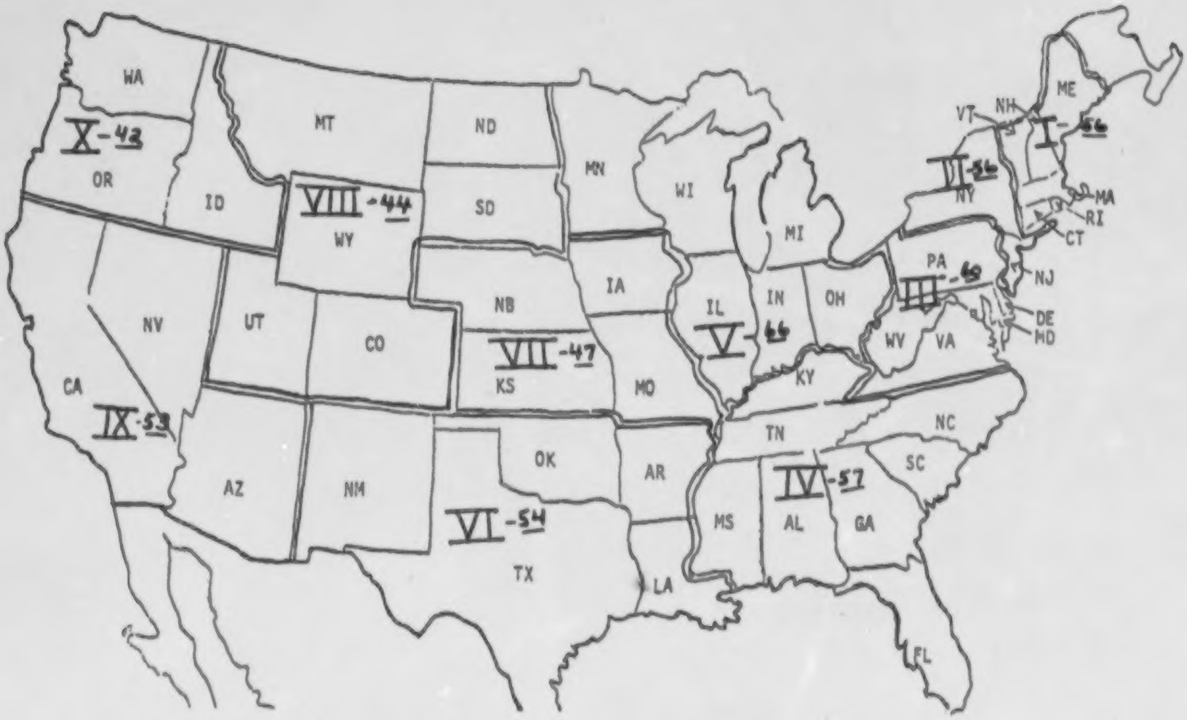
Each of the randomly selected agencies was sent two Evidence Technician Questionnaires along with a request that the agency ask two of its evidence technicians/crime scene specialists to complete the questionnaire. The distribution of questionnaires and responses by type department within LEAA Regions is shown at Table XI-1 .

Of the 535 agencies 141 replied that they did not have an individual in their organization designated as an Evidence Technician. As might be expected, most of these negative replies came from city agencies employing from 1 to 9 officers or from 10 to 49 officers. Most replies from the smallest agencies stated that the chief or a particular senior officer was responsible for all "evidence technician" type work. Very few agencies employing from 10 to 49 officers offered any information as to why they did not utilize Evidence Technicians, per se.

MAP XI-1

EVIDENCE TECHNICIAN QUESTIONNAIRE DISTRIBUTION

WITHIN LEAA REGIONS


WA
X-42
OR
ID
MT
VIII-44
WY
ND
SD
MN
WI
MI
ME
VT
NH
I-56
II-56
NY
MA
RI
CT
PA
III-60
NJ
DE
MD
NB
IA
IL
IN
OH
V-66
WV
VA
VII-47
KS
MO
KY
CA
NV
UT
CO
IX-53
AZ
NM
OK
AR
TN
NC
SC
IV-57
VI-54
TX
MS
AL
GA
LA
FL

LEAA REGIONS

Department Type	I	II	III	IV	V	VI	VII	VIII	IX	X	Total
State	4 / 12	2 / 4	1 / 10	1 / 18	6 / 14	0 / 12	0 / 10	0 / 14	0 / 10	0 / 8	14 / 112
County	0 / 20	4 / 20	1 / 20	7 / 20	4 / 20	1 / 20	1 / 20	3 / 20	2 / 20	4 / 20	27 / 200
City (1-9 Officers)	0 / 18	0 / 20	0 / 20	2 / 20	1 / 20	0 / 20	0 / 20	0 / 20	0 / 20	1 / 20	4 / 198
City (10-49 Officers)	0 / 20	0 / 20	1 / 20	4 / 20	4 / 18	3 / 20	1 / 20	2 / 18	3 / 20	1 / 20	19 / 196
City (50+ Officers)	1 / 20	0 / 20	2 / 20	13 / 20	9 / 20	0 / 20	10 / 18	2 / 14	6 / 30	3 / 12	46 / 194
50 Largest Cities	2 / 2	3 / 8	0 / 10	8 / 16	8 / 20	14 / 16	6 / 6	0 / 2	0 / 6	4 / 4	45 / 90
Township	0 / 20	0 / 20	1 / 20	0 / 0	0 / 20	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	1 / 80
Total	7 / 112	9 / 112	6 / 120	35 / 114	32 / 132	18 / 108	18 / 94	7 / 88	11 / 106	13 / 84	156 / 1070

Questionnaires returned

Questionnaires sent

TABLE XI-1

Distribution of Evidence Technician (Individual) Questionnaires Sent and Returned

(Two Questionnaires Sent to Each of 535 Law Enforcement Agencies)

On the basis of the original sample of 535 agencies (constituting a total sample population of 1070) and a response of 156, the raw percent of questionnaire responses was 15%. However, if the 141 negative agency responses (representing 282 questionnaires) are excluded, the response rate was 20%.

It is not known whether or not the sample is representative of the profession. By many standards it is, i.e., geographical distribution, size agencies represented, organizational location of the Evidence Technician, etc. However, in one sense it may not be representative--the educational level of the respondents. Several experienced Evidence Technician administrators feel that the average Evidence Technician may not be as highly educated as those who responded to this survey.

FINDINGS

- There is no accepted job title that identifies an individual whose primary job is to collect and evaluate crime scene physical evidence.
- Most individuals, whose primary job is the collection and evaluation of crime scene physical evidence, are assigned to line organizations within their agency.
- Agencies most likely to employ Evidence Technicians are those that employ 50 or more officers (including the 50 largest cities in the United States).
- The majority of Evidence Technicians have had approximately four years of experience in that profession.
- The majority of Evidence Technicians enter that profession by requesting transfer from other duties as a peace officer.

- The average individual assigned as an Evidence Technician spends 68% of his working time in that capacity.
- Most Evidence Technicians spend the greatest amount of their work time at the crime scene and while there they most often perform such tasks as: search for physical evidence; latent fingerprint work; photography; and measuring/sketching.
- Evidence Technicians testify as expert witnesses an average of 11+ times per year on the following most common topics: latent fingerprints; the scene and the search; photographs.
- Most Evidence Technicians testify in homicide, burglary and rape cases.
- Evidence Technicians perceive their position to be of higher status than do their employers--signifying an encouraging "pride of profession."
- Aside from O-J-T courses, there appear to be very few germane education/training opportunities for Evidence Technicians--beyond the popular orientation type courses.
- The Evidence Technician is predominately male, has an AA degree from a community college, is 36 years old and has had less than five years experience in the field of evidence technology.
- The majority of the respondent Evidence Technicians are in a formal evidence technician program, assigned to the laboratory in the technical services or to the detective bureau of a large city police department.
- The majority of the departments do not have a clear policy concerning who is in charge at the scene of a crime. The Evidence Technician is generally not in charge, even for a specified period.
- To raise the level of acceptance of Evidence Technicians the respondents recommended: better public relations and more communications between

the E.T.'s and the department; more E.T. education/training; and more E.T. professionalism.

- More Evidence Technicians than any other discipline within this survey objected to their meetings with counsel. In particular they want meetings to be scheduled, to be long, and not to be held in the court hallway.
- Evidence Technicians feel: that the minimum education for entry into their field should be high school graduation or an AA degree in an appropriate field; that additional O-J-T is required; and that the entrant should have been a patrolman for an average of 2 to 3 years.
- Research should be conducted to develop more sophisticated techniques in crime scene search, to include new photography and latent fingerprint discovery and recovery.
- More Evidence Technicians than any other discipline within this survey objected to the nature of their meetings with counsel. In particular they want pretrial meetings to be scheduled, to be of greater duration, and not to be held in the court hallway.

RECOMMENDATIONS

These recommendations apply to the findings for Chapters XI (Evidence Technician, Individuals) and XII (Evidence Technician Units).

- There is a need to conduct a complete, nation-wide manpower study of the Evidence Technician concept to include a census and a forecast of needs.
- Concurrently, a study should be made of the requirement for sets of model entry qualifications as well as standards for continuation or promotion in the program.
- Sets of model job titles and descriptions should be devised to accommodate the various organizational entities within which E.T. units may housed--particularly staff organizations.
- The operational responsibilities and authority of the Evidence Technician should be studied--particularly in terms of whether or not a trained E.T. should be in charge at the scene of the crime.
- A study should be made of the possibility of making the E.T. Program concept a career program.
- Given one or more model E.T. Programs, (reflecting the results of the above studies) a sophisticated cost/benefit study should be made comparing typical current "evidence technician" type operations with the models. In particular, this study should be aimed at the operational and budget environment of law enforcement agencies with 10 to 49 officers.
- Based on sets of model E.T. Programs, sets of model education curricula should be designed for implementation at the AA degree level and at the BS level.

- The organization and mechanism for "approved" continuing education programs (formal courses, seminars, workshops) should be structured. Implementation, preferably, would be accomplished by a professional society dedicated to the E.T. profession.
- The feasibility of regional, advanced O-J-T programs should be studied--as opposed to the current practice of informal, limited scope, locally administered O-J-T programs. The possibility of federal support for the regional programs should be explored--to include transportation, per diem, school supplies, and program administration costs.
- A systematic, coordinated research program in evidence technician techniques should be formulated--to include the provision for "acorn" grants (small grants to operating agencies).

SURVEY RESULTS

1. QUESTION:

What is your job title? ______________________

Response:

- The most common job titles cited were as follows:

Nr. of Respondents	Title
42	Evidence Tech.
32	ID Officer
15	Lab. Tech.
17	Detective
14	Patrolman
11	Crime Scene/Search Tech.
7	Investigator

Response Analysis:

- Further investigation reveals that the titles "Evidence Technician" and "Crime Scene/Search Technician" are most often found in the larger agencies, and in particular, in agencies that have a criminalistics laboratory.
- In terms of when the titles were introduced, "ID Officer" is the oldest, "Evidence Technician" is next, and the newest title is "Crime Scene/Search Technician".

Finding:

- There is no accepted job title in use today to identify the individual whose primary job is to collect and evaluate crime scene physical evidence. The most commonly used title is "Evidence Technician", which unfortunately, also is used to identify an individual who does not collect crime scene evidence.

2. QUESTION:

If you work for a police department or sheriff's office, which one of the following most closely describes where you are assigned?

☐ Detective (Investigative)
☐ Operations
☐ Patrol
☐ Administration
☐ Technical Service
☐ Other (Specify) ________

Response:

- See Table XI-2 for distribution of where Evidence Technicians are assigned.

Finding:

- Most Evidence Technicians are assigned to line organizations within their agency.
- Agencies most likely to employ Evidence Technicians are those that employ 50 or more officers (including the 50 largest cities in the United States.

TABLE XI-2

FREQUENCY DISTRIBUTION OF WHERE EVIDENCE TECHNICIANS ARE ASSIGNED -- BY TYPE AGENCY
(Some Agencies Reported More Than One Place)

Place Assigned ⟶	State Police	County Sheriff	City (1-9 Officers)	City (10-49 Officers)	City (50+ Officers)	50 Largest Cities	Townships	Total
Detective	1	11	1	12	16	11	1	53
Operations	1	1	1	1	0	2	0	6
Patrol	1	4	1	2	6	13	0	27
Administration	1	3	4	3	3	1	0	15
Tech. Service	1	14	0	2	25	28	0	76
Other	1	0	0	0	2	5	0	8

3. QUESTION:

Please indicate in which of the following Evidence Technician activities you engage: (Check all appropriate)

☐ Crime Scene Search
☐ Photog., Crime Scene
☐ Measuring and Drawing
☐ Photography, Accident and Traffic
☐ Photography, Dark Room Work
☐ Photography, Surveillance
☐ Fingerprints, Crime Scene
☐ Fingerprints, Classification and Filing
☐ Fingerprints, Comparison and Identification
☐ Blood Alcohol Testing
☐ Blood Testing
☐ Semen Testing
☐ Narcotics Field Testing
☐ Serial Number Restorations
☐ Report Writing
☐ Courtroom Testimony
☐ Perform Research
☐ Teach Related Subjects
☐ Manage or Supervise aforementioned activities
☐ Other (Specify)__________

Response:

Activities		% Engaged
Basic Field Procedures	Crime Scene Search	95
	Court Room Testimony	94
	Fingerprint Crime Scene	93
	Photograph Crime Scenes	91
	Report Writing	88
	Measure/Draw Crime Scenes	84
	Photograph Accident Scenes	60
Analytical Procedures	Semen Testing	8
	Blood Testing	12
	Research	14
	Blood Alcohol Testing	16
Support & Other Procedures	Dark Room Processing	54
	Fingerprinting Invest.	48
	Serial No. Restoration	42
	Fingerprinting Class.	40
	Teach	40
	Photographic Surveillance	33
	Narcotic Field Testing	31

4. QUESTION:

How long have you been an Evidence Technician?

__________ Years

Response:

- The mean experience was 4-1/2 years with 57% having 4 or fewer years experience.

Frequency Distribution of Years as an Evidence Technician

Agency	1-4 Years	5-9 Years	10+
State Police	6	7	2
County Sheriff	11	6	7
City (1-9 Officers)	0	1	0
City (10-49 Officers)	12	2	1
City (50+ Officers)	26	9	11
50 Largest Cities	33	14	7
Township	1	0	0
Total	89	39	28

Finding:

- The majority of Evidence Technicians have had approximately 4 years of experience in that profession.

5. QUESTION:

How did you enter the field of the Evidence Technician?
(Check one)

☐ Requested to be transferred to the job
☐ Assigned to the job
☐ Hired directly for the job

Response:

- The majority of persons were in related areas and requested transfer to the evidence technician positions.

89	Requested transfer
41	Assigned
26	Direct hire

Response Analysis:

- All 26 individuals who responded "Direct Hire" were civilians (as opposed to sworn officials).

Finding:

- The majority of Evidence Technicians enter that profession by requesting transfer from other duty as a peace officer.

6. QUESTION:

a. Approximately what percent of your duty time is spent as an Evidence Technician?

☐ 80-100% ☐ 40-60%

☐ 60-80% ☐ Less than 40%

b. If you are not a full-time Evidence Technician, what other duties do you perform?

____

____

Response:

- a. The time spent on specific evidence technician functions was generally high.

Nr. of Respondents	% of Time Spent on E.T. Duties
32	Under 40%
20	40 - 60%
21	60 - 80%
83	80 - 100%

- b. There is strong correlation between the amount of time spent as an Evidence Technician and the other duties performed:

  Those who spent less than 50% of their time on E.T. work are generally assigned to other duties that involve a continuous span of time -- such as Patrol.

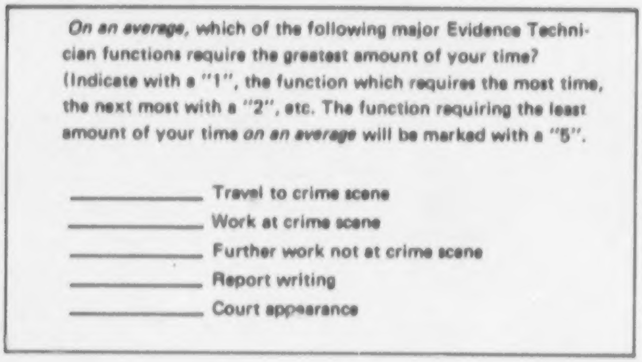
  Conversely, those who spend most of their time on E.T. duties are assigned other tasks that are interruptive in nature, e.g., fingerprinting, photography, prisoner processing, general administrative.

- c. Those spending from 60% to 100% of their time on E.T. duties generally come from the largest agencies.

Finding:

- The average individual assigned as an Evidence Technician spends 68% of his working time in that role. The remainder of his time is generally spent on related tasks that are interruptive in nature (fingerprinting, etc.)
- Those who are called Evidence Technicians but who spend less than 50% of their time in that role are usually assigned other duties that are non-interruptive (patrol, etc.).

7. QUESTION:



On an average, which of the following major Evidence Technician functions require the greatest amount of your time? (Indicate with a "1", the function which requires the most time, the next most with a "2", etc. The function requiring the least amount of your time *on an average* will be marked with a "5".

__________ Travel to crime scene
__________ Work at crime scene
__________ Further work not at crime scene
__________ Report writing
__________ Court appearance

Response:

- The specific functions performed rank as follows according to time spent:

  Most - Work at scene
  Further work not at scene
  Report writing
  Travel to scene
  Least - Court appearances

- Question 4 indicates that most of his activities at the crime scene involve the search for physical evidence, latent fingerprint work, photography and measuring/sketching.

Finding:

- Most Evidence Technicians spend the greatest amount of their time working at the crime scene and while there they most often perform such tasks as: search for physical evidence; latent fingerprint work; photography; and measuring/sketching.

8. QUESTION:

If you have testified in court as an expert witness:

a. How Often? ______1971 ______1972 ______1973

b. On What Subjects? (See Question #9)______________

____

____

c. In What Types of Cases?______________

Response:

- a. Actual appearances to testify in court averaged:

  1971 - 10.8 per person

  1972 - 11.6 per person

  1973 - 11.4 per person

- b. Common subjects on which the respondents testified included:

  68 - Latent Fingerprints

  45 - "Search"

  44 - Photography

  26 - Crime Scene Diagrams

  26 - Fingerprint Comparisons

  12 - Narcotics Tests

  7 - Firearms Evidence

  5 - Body Fluid Tests

  3 - Blood/Alcohol Tests

  2 - Breathalyzer Tests

- c. Types of cases cited:

    52 - Homicide

    48 - Burglary

    30 - Rape

    29 - Robbery

    10 - Assault

    10 - Major Traffic Accidents/ Hit & Run

    7 - Arson

Response Analysis:

- Most respondents indicated 2 to 3 subject areas on which they testified, involving 3 or more types of cases.

Finding:

- Evidence Technicians testify as expert witnesses an average 11+ times per year on the following most common topics: latent fingerprints; the scene and the search; photographs.
- Most Evidence Technicians testify in homicide, burglary, and rape cases.

9. QUESTION: [illegible]n the space provided, please indicate your experience as an Evidence Technician.

Position Description	Year	Salary Range	Reason for Changing

Response:

- Frequency distribution of salaries by type EMPLOYER.

Agency	Salary Range (per year)				Average Salary
	Less Than $5,000	$5,000-9,999	$10,000-14,999	$15,000+	
State Police	-	1	4	2	$ 13,200
County Sheriff	1	6	4	9	13,100
City (1-9 Officers)	-	1	-	-	7,500
City (10-49 Officers)	-	2	4	-	10,800
City (50+ Officers)	-	7	15	3	14,600
50 Largest Cities	-	7	29	4	12,100
Township	-	-	1	-	12,500

10. QUESTION:

If your present position requires special qualifications, please indicate. (Check all appropriate)

a. Personal Qualifications
  ☐ Age
  ☐ Sex
  ☐ Race
  ☐ Height
  ☐ Eyesight
  ☐ Citizenship
  ☐ Background Investig.
  ☐ Place of Residence
  ☐ Other (Specify)_______

b. Testing
  ☐ Proficiency
  ☐ Dexterity
  ☐ Intelligence
  ☐ Psychological
  Type

c. Years of Experience (Circle one)
  1 2 3 4 5 6 7 8 9 10

d. Professional
  ☐ Certification___________
  (By Whom)

e. Education
  ☐ High School
  ☐ College (Less than 4 years)
  ☐ College (Bachelors)
  ☐ Graduate School
  ☐ Specialty Courses
  ☐ Other (Specify)_______

Response:

- The position requirements reported by the technicians were more stringent than those reported by the agencies themselves.

- Under "Personal Qualifications", background check, age and citizenship were most often indicated.

- No "Testing" qualifications were reported.

- On the average, four years of law enforcement experience were required.

- Required education level was reported to be:

79	High School
35	College (no degree)
9	Bachelor degree
2	Graduate School

- 27 reported additional professional certification.

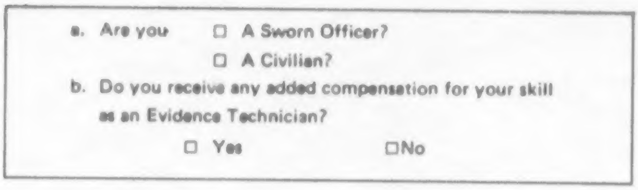
Response Analysis:

- In general, those who reported professional certification requirements were assigned to crime laboratories.

Finding:

- Evidence Technicians perceive their position to be of higher status than do their employers --- signifying an encouraging "pride of profession".

11. QUESTION:



a. Are you ☐ A Sworn Officer?
☐ A Civilian?
b. Do you receive any added compensation for your skill as an Evidence Technician?
☐ Yes ☐ No

Response:

- 83% were sworn officers and 17% civilians.
- 13% received additional compensation for their evidence technician skills.

Response Analysis:

- A comparison of work performed, years of service and salary revealed no discernable differences between sworn officers and civilians.
- However, the civil service personnel program for sworn officers is considered to be more extensive than that for their civilian counterparts.

12. QUESTION: Please indicate your formal educational background.

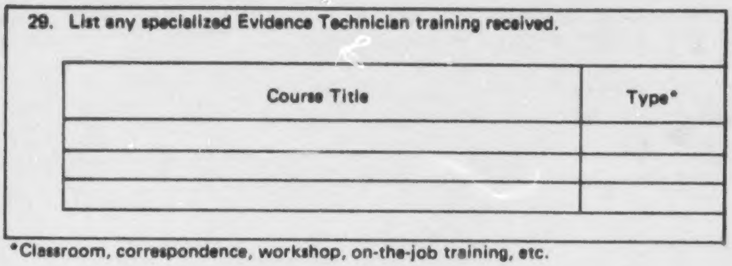
High School/College	Year Completed	Diploma or Degree

Response:

- Most had done undergraduate work
- The following is a percent distribution of highest level of education attained:

14%	High School Diploma
60%	Had attended college and of these 2/3 had received an AA Degree
20%	Bachelor Degree
6%	Graduate Work or Graduate Degrees

13. QUESTION:



29. List any specialized Evidence Technician training received.

Course Title	Type*

*Classroom, correspondence, workshop, on-the-job training, etc.

Response:

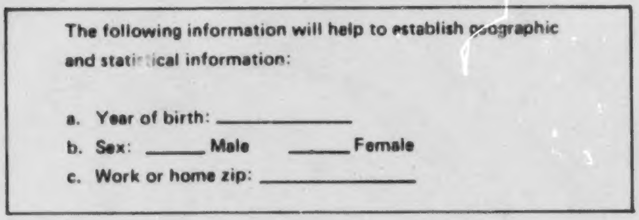
		Type*		
Courses	O-J-T	Workshop	Correspondence	Total
Photography	39	9	0	48
Crime Scene Search	40	8	8	56
Criminalistics	14	3	3	20
Fingerprints	41	12	12	65
Advanced Fingerprints	20	7	0	27
Evidence Collection/ Technician	35	3	1	39
Breathalyzer	10	1	0	11
Narcotics	6	3	0	9

- It is not certain where some of the above training was acquired, i.e., in a college course or in an O-J-T program.

Finding:

- Aside from O-J-T courses, there appear to be few appropriate training courses available to Evidence Technicians--beyond the popular orientation type courses.

14. QUESTION:



The following information will help to establish geographic and statistical information:

a. Year of birth: ____________

b. Sex: _____ Male _____ Female

c. Work or home zip: ____________

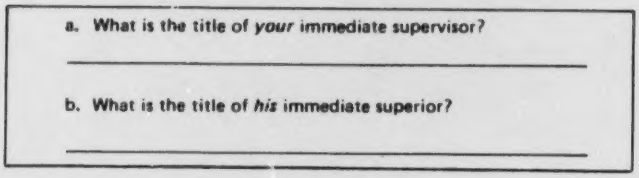
Response:

- See TableXI-3 for a profile of the evidence technician.

Finding:

- The Evidence Technician is predominately male, has an AA degree from a community college, is 36 years old and has had less than five years experience in the field of evidence technology.

15. QUESTION:



a. What is the title of *your* immediate supervisor?

____

b. What is the title of *his* immediate superior?

____

Response:

- The four most cited titles of immediate supervisors were:

25	Lieutenant
45	Sergeant
9	Laboratory Director
26	Captain

TABLE XI-3

EVIDENCE TECHNICIAN PROFILE*

	NO.	SEX		EDUCATION				AGE					YRS. EXPERIENCE			
EMPLOYMENT		M	F	H.S.	Under Grad.	B/S B/A	Post Grad	-20	21-30	31-40	41-50	51-60	1-5	6-10	11-20	21-31
Municipal	114	112	3	17	70	23	4	0	32	52	19	11	80	21	10	2
County	27	29	0	4	17	6	0	0	7	7	7	6	15	7	4	1
State	14	11	0	2	4	3	5	0	2	2	4	3	6	3	1	0
Other	1	1	0	0	0	1	0	0	0	0	1	0	0	0	1	0
Total	156	153	3	23	91	33	9	0	41	61	31	20	101	31	16	3

16. QUESTION:

Are you assigned to a laboratory when working as an Evidence Technician?

☐ Yes ☐ No

Response:

- 84 Yes

  72 No

17. QUESTION:

Does your agency have a formal Evidence Technician program?

☐ Yes ☐ No

Response:

- Following are the number of respondents reporting that they were in formal Evidence Technician Programs:

Department	Response
State Police	9 of 14 (64%)
County Sheriff/Police	11 of 27 (41%)
City (1-9 Officers)	0 of 4 (0%)
City (10-50 Officers)	2 of 19 (10%)
City (over 50 Officers)	21 of 46 (46%)
50 Largest Cities	31 of 45 (82%)
Townships	0 of 1 (0%)

18. QUESTION:

> Is there a formal, written, job description for your work as an Evidence Technician?
>
> ☐ Yes ☐ No

Response:

- Following are the number of respondents reporting that their Evidence Technician position is formally recognized, in writing:

Department	Response
State Police	7 of 14 (50%)
County Sheriff/Police	13 of 27 (50%)
City (1-9 Officers)	0 of 4 (0%)
City (10-50 Officers)	4 of 19 (20%)
City (Over 50 Officers)	27 of 46 (60%)
50 Largest Cities	40 of 45 (90%)
Townships	0 of 1 (0%)

Finding:

- The majority of Evidence Technicians are in a formal evidence technician program, assigned to the laboratory in the technical service division or to the detective bureau of a large city police department.

19. QUESTION:

> *On an average,* how soon after the report of a crime do you arrive at the crime scene?
>
> ________________ hours

Response:

- The mean reported lapsed time until arrival at the scene was 1.3 hours.
- Table XI-4 shows the distribution of lapsed time according to the department to which attached or assigned.

TABLE XI-4

Evidence Technician
Average Time Arrival on Crime Scene

	TIME LAPSE IN HOURS							
ASSIGNED TO:	1/2 or under	1	1 1/2	2	2 1/2	3-4	4-10	11-24
Detectives	33	10	1	2	0	0	1	0
Operations	3	0	0	0	0	0	0	0
Tech. Service	37	8	3	1	0	4	2	2
Patrol	17	6	0	0	0	0	0	0
Lab & Others	6	1	0	0	0	0	0	0

Table XI-4

Lapsed Time From Report of Crime
To Arrival on Scene

20. QUESTION:

a. Are you in actual command at a crime scene?

☐ Yes ☐ No

b. If "yes", how is the responsibility assigned?

____

____

c. If "no", who is in actual command?

Response:

- Once at the scene, evidence technicians were in actual command 46% of the time.
- Evidence Technicians from Administrative or Technical Service Bureaus were only in charge 33% of the time.
- Evidence Technicians from the Detective Bureau or Patrol were in charge 56% of the time.
- "General Orders" were cited as the most prevalent way the responsibility was specifically assigned.
- Detectives were most commonly cited as the individual actually in charge.
- "Ranking Officers" were cited as the least professionally qualified individuals to be placed in charge of the crime scene.

Finding:

- The majority of the departments do not have a clear policy concerning who is in charge at the scene of a crime. In particular, the Evidence Technician is generally not in charge.

21. QUESTION:

If you prepare reports for courts, does the court system accept your reports in lieu of your appearance at preliminary or grand jury hearings?

☐ Yes ☐ No

Response:

- The reports prepared for the courts were not in general accepted in lieu of appearances at preliminary or grand jury hearings.
- They were accepted in lieu of appearances in only 33% of cases reported.

22. QUESTION:

Please indicate the agencies and individuals with whom you, personally, have dealt in the course of your work as an Evidence Technician. (Check all appropriate)

☐ Police Department
☐ Sheriff's Office
☐ State Police
☐ Environmental Agencies
☐ Dept. of Agriculture
☐ Secret Service
☐ FBI
☐ Social Security
☐ Other (Specify)________
☐ Criminalistic Laboratories
☐ Toxicology Laboratories
☐ Disaster Squads
☐ Coroner's Office
☐ Medical Examiner's Office
☐ Forensic Pathologists
☐ Forensic Psychiatrists
☐ Forensic Odontol./Anthro.
☐ Questioned Document Examiner

Response:

- Evidence Technicians reported personal contact with the following agencies and persons:

155	Police Department	65	Toxicology Laboratory
133	Sheriff's office	23	Disaster Squad
106	State Police	106	Coroner's office
14	Environmental agencies	94	ME office
9	Dept. of Agriculture	69	Forensic pathologist
69	Secret Service	5	Forensic Psychiatrist
132	FBI	7	Forensic Odontologist/ Anthropologist
9	Social Security	55	Questioned & Document Examiner
118	Criminalistic Laboratory		

23. QUESTION:

What can be done to raise the level of understanding and acceptance of Evidence Technicians?

____
____
____

Response:

- Common ways cited to raise the level of understanding were as follows:

55 - Better public relations and more communications within the department and with other agencies.
35 - More training and education.
17 - More professionalism on part of Evidence Technician.

24. QUESTION:

How adequate are the Evidence Technician facilities and equipment available to you? (Check one)

☐ Outstanding ☐ Adequate ☐ Inadequate

Response:

- Equipment available to evidence technicians was rated as follows:

16	Outstanding
99	Adequate
41	Inadequate

Response Analysis:

- Further query revealed that most agencies with a formal Evidence Technician Program have an agency-designed special evidence technician kit for use at the crime scene.

25. QUESTION:

What additional facilities and equipment would you like to have? ______________________________

____

____

Response:

• Times Cited	Equipment
36	Equipped Mobile Laboratory
28	Advanced Photographic Equipment, cameras, processing
23	More/Updated Equipment
12	Automated Fingerprint Searching Equipment
7	New Protective Clothing
	Facilities
34	Enlarged Lab/Work Space
9	Enlarged Evidence Storage Space

26. QUESTION: **If you Appear in court, do you feel that your meetings with counsel adequately prepare you for court presentations.**

☐ Yes ☐ No

If "No", How Might the Matter be Improved? ______________________________

Response:

- 84 Yes

  61 No

- Of those who answered "No" the most common suggestions for improvement were:

  Scheduled pretrial meetings

  More time with counsel

  A private meeting room (not the court hallway)

27. QUESTION: **What is your evaluation of your Evidence Technician education and training?**

	Outstanding	Good	Fair	Poor
Formal Courses	☐	☐	☐	☐
Smnrs. &Wkshps.	☐	☐	☐	☐
On-the-Job Trng.	☐	☐	☐	☐

Response:

- Evidence technicians evaluated their education and training as generally good.

-

	Outstanding	Good	Fair	Poor
Formal courses	39	65	10	14
Seminars/workshops	17	64	18	20
On-the-job training	38	59	39	8

28. QUESTION:

In your opinion, what is needed to properly train you as an Evidence Technician? ______________________________

____

____

Response:

- A total of 267 general suggestions were made:
  - 121 - Formal Education (ranging from "a course" to a "program of study.")
  - 40 - Formal O-J-T to include written lesson plans, text, practical exercises, tests--all conducted in a classroom atmosphere.
  - 22 - "Continuing Education"
  - 15 - Workshops on new techniques
  - 15 - Seminars for the exchange of ideas
  - 14 - Forensic laboratory classes
- Courses recommended included:
  - 20 - Fingerprints
  - 14 - Specialized, all subjects
  - 10 - Crime scene investigation
  - 10 - Evidence collection
  - 10 - Photography
  - 6 - How crimes are commited

29. QUESTION:

What do you believe should be the minimum education, training, and experience standards or qualifications for individuals *entering* the field of Evidence Technician.

Response:

- 191 recommendations were made:

Education

46 - High School Education

45 - College (2 years, AA degree in Police Science or a related area)

7 - Bachelors Degree

Training

14 - Required Formal O-J-T

6 - Evidence Technician Schools

Experience

A patrolman with:

1 year experience - 9

2 years " - 19

3 years " - 14

4 years " - 7

5 years + " - 13

An investigator with:

1 year experience - 2

2 + years " - 3

Laboratory experience - 6

Findings:

- Evidence Technicians feel: that the minimum education for entry into their field should be high school graduation or an AA degree in an appropriate field; that additional O-J-T is required; and that the entrant should have been a patrolman for an average of 2 to 3 years.
- 59 respondents recommended both high school or two years of college AND experience.

30. QUESTION:

In your field what areas are most in need of research?

____

____

Response:

- Areas most in need of research were cited as follows:
    All facets of fingerprinting evidence.
    New techniques in photography.
    New technique for crime scene investigation.
    The fields of ballistics and arson.
- These areas correlate with the responses to Question 3. (activities performed).

Finding:

- Research should be conducted to develop more sophisticated techniques in crime scene search, to include new photography, latent fingerprint discovery and recovery. ballistics, and arson.

CHAPTER XII

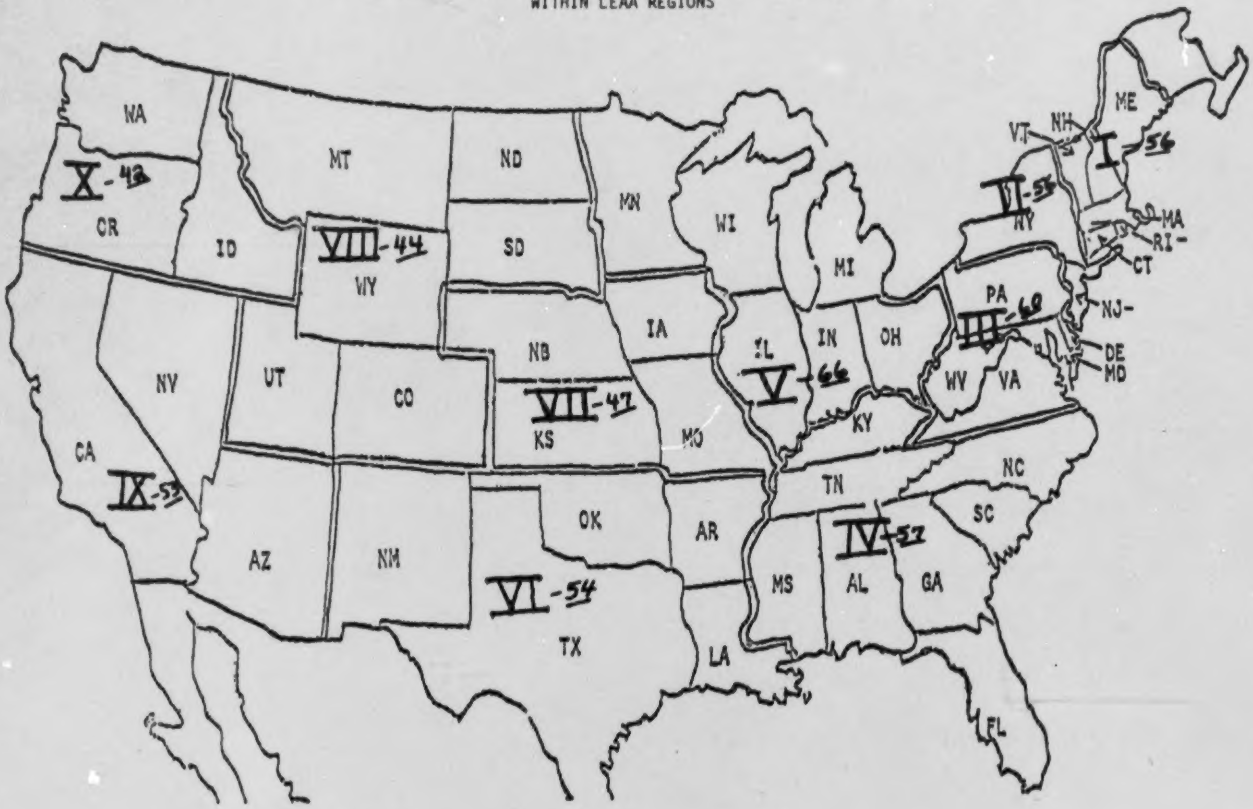
EVIDENCE TECHNICIAN UNIT

DEFINITION

The Evidence Technician Unit is not an independent agency in the same sense as is a forensic laboratory. The laboratory has budgetary and management responsibilities. The E.T. Unit may have neither of these. Based on the results of the survey the E.T. Unit may be assigned to a line organization (patrol/operations, detective/investigations, etc.) or to a staff organization such as "technical services/administration" or to the criminalistics laboratory.

MAP XII-1

EVIDENCE TECHNICIAN AGENCY QUESTIONNAIRE DISTRIBUTION WITHIN LEAA REGIONS


WA
X-42
OR
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MD
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III-60
OH
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IL
V-66
IA
NB
VII-47
KS
MO
KY
WV
VA
NC
TN
SC
IV-57
AL
GA
MS
FL
AR
LA
OK
VI-54
TX
NM
AZ
CO
UT
NV
CA
IX-53

LEAA REGIONS

Department Type	I	II	III	IV	V	VI	VII	VIII	IX	X	Total
State	3 / 6	1 / 2	0 / 5	1 / 9	2 / 7	1 / 6	0 / 5	1 / 7	1 / 5	0 / 4	10 / 56
County	1 / 10	3 / 10	2 / 10	0 / 10	1 / 10	1 / 10	1 / 10	2 / 10	7 / 10	3 / 10	21 / 100
City (1-9 Officers)	1 / 9	0 / 10	2 / 10	1 / 10	1 / 10	0 / 10	0 / 10	1 / 10	0 / 10	4 / 10	10 / 99
City (10-49 Officers)	0 / 10	0 / 10	1 / 10	5 / 10	2 / 9	2 / 10	2 / 10	2 / 9	1 / 10	2 / 10	17 / 98
City (50+ Officers)	3 / 10	3 / 10	3 / 10	3 / 10	3 / 10	2 / 10	5 / 9	2 / 7	5 / 15	2 / 6	31 / 97
50 Largest Cities	1 / 1	1 / 4	1 / 5	3 / 8	6 / 10	5 / 8	2 / 3	0 / 1	0 / 3	2 / 2	21 / 45
Township	0 / 10	0 / 10	1 / 10	0 / 0	0 / 10	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	1 / 40
Total	9 / 56	8 / 56	10 / 60	13 / 57	15 / 66	11 / 54	10 / 47	8 / 44	14 / 53	13 / 42	111 / 535

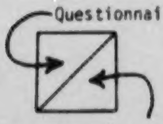
Questionnaires returned

TABLE XII-1

Distribution of Evidence Technician (Agency) Questionnaires Sent and Returned

(Questionnaires Sent to 535 Law Enforcement Agencies)

SURVEY BACKGROUND

At the start of the project, a literature search was conducted to ascertain the availability of a list(s) of law enforcement agencies that had a formal evidence technician program. No such list was uncovered. It was then decided to use a stratified random sample developed at the National Bureau of Standards as our mailing list. That sample included 535 agencies distributed throughout the 10 LEAA Regions in the United States. See Map XII-1 for LEAA Regions.

The agency totals used in the sample were as follows:

State Police/Agencies	- 56
County Sheriffs/Police	- 100
Cities with 1-9 officers	- 99
Cities with 10-49 officers	- 98
Cities with 50+ officers (excluding 50 largest cities)	- 97
50 largest cities	- 45
Townships	- 40
Total	535

Each of the randomly selected agencies was sent an Evidence Technician Agency Questionnaire. The distribution of questionniares and responses by type department within LEAA Regions is shown at Table XII-1.

Of the 535 agencies 141 replied that they did not have such a position in their organization. As might be expected most of these negative replies came from city agencies employing from 1 to 9 officers or from 10 to 49 officers.

On the basis of the original sample of 535 agencies and a response of 111, the raw percent of questionnaire responses was 21%. However, if the 141 negative agency responses are included, the response rate was 47%.

The response sample is considered to be representative of the total sample.

It is interesting to note that some agencies failed to return answered questionnaires but the individuals to whom they assigned the Evidence Technician Individual questionnaires -- completed them. The opposite was also true. Any agency that failed to answer a significant number of questions was eliminated and was not included in the results shown in this report.

In addition to the questionnaires, on-site visits were made by the Project Staff to 24 representative law enforcement agencies throughout the United States. The primary goal of these visits was to witness the operational employment of Evidence Technicians. The observations gained from these visits are incorporated into this report.

FINDINGS

- The majority of the agencies that stated that they had a formal Evidence Technician program were from the larger law enforcement agencies. As an example, two thirds of the 50 largest cities stated that they have formal E.T. programs.

- 49 of the 111 responding agencies reported having a formal E.T. Program.

  However

  * of the 49 only half indicated that they had written job descriptions,

  * and most of these were in the process of being rewritten.

  WHICH INDICATES

  That there are few, well organized, formal E.T. Programs in operation today.

- If the police department in a larger city has a crime laboratory, the probability is high that it also has a formal Evidence Technician program.

- Except among State Police and Sheriffs' Offices, Evidence Technicians are not often assigned to crime laboratories.

- Budget data concerning the functional activity of collecting evidence is generally unavailable.

- Slightly over half the agencies would like to increase their budget for this activity -- at an average increase of 37%.

- The establishment of a policy for the assignment of responsibility for the crime scene is a very complex matter --particularly as it applies to Detectives' and Evidence Technicians

- Many departments assign the responsibility to the senior officer present -- regardless of specific competence.

- The rate of introduction or significant expansion of Evidence Technician programs among larger agencies was approximately 21% during the period 1971-1974 (an annual rate of 5%). The anticipated rate among the same size agencies is 18% for the period 1975-1977 -- representing an annual rate of 6%.

- Although only two of the smaller agencies showed a planned E.T. growth program, many expressed the need for such a program.

- Evidence Technician programs experience a low turnover ratio in personnel.

- Because factual budgetary data concerning E.T. programs were generally unavailable, the question was asked that if funds were available would the agency expand its E.T. program? Over half of the responding agencies indicated that they would expand the program--by an average of 37%--indicating its recognized worth.

- Very few agencies appear to pool their training programs with neighboring jurisdictions.

- The majority of the agencies would like to increase the education and training of their Evidence Technicians and to increase the E.T. program strength.

- The most common research needs of E.T. agencies include: the handling and preservation of evidence; fingerprint techniques (plus automation of search); and firearms.

1. QUESTION:

a. Does your organization have a formal Evidence Technician program?

☐ Yes ☐ No

b. If "yes", do you maintain written job descriptions for your Evidence Technicians?

☐ Yes ☐ No

Response:

		Formal E. T. Program		Written Job Description
Agency	No.	Yes	No	Yes
State	10	4	6	3
County	21	11	9	5
City 1-9 Officers	10	0	9	0
City 10-49 Officers	17	4	13	1
City 50+ Officers	31	15	16	9
50 Largest Cities	21	14	7	8
Township	1	1	0	0
Total	111	49	53	26

- Beginning at page XII-32 are some examples of job descriptions for personnel who collect evidence at the crime scene.

Findings:

- 49 of the 111 responding agencies have a formal E.T. Program. The majority of the agencies that stated that they had a formal Evidence Technician program were the larger agencies.
- Two thirds of the 50 largest cities stated that they had E. T. programs.
- Of the 49 with a formal E. T. program only half indicated that they have written job descriptions -- of which most were in the process of being rewritten.

2. QUESTION:

a. Does your agency have a crime laboratory?

☐ Yes ☐ No

b. If "yes", which *one* of the following *most closely* describes the relationship of the Evidence Technicians to the laboratory?

☐ Assigned to the Laboratory

☐ Not assigned to the Laboratory but work with Laboratory when the evidence requires

☐ Do not normally work with the Laboratory

Response:

	Column 1.	Column 2.	Column 3.	Column 4.
Agencies	Number of agencies having formal Evidence Technician Programs	Number of agencies from Column 1 who have crime laboratories	Number of agencies from Column 2 that assign Evidence Tech. to the laboratory	Number of agencies from Column 2 in which Evidence Technician is lab qualified
State Police	4 out of 10	4 out of 4	4 out of 4	4 out of 4
County Sheriff or Police	10 out of 21	9 out of 10	7 out of 9	6 out of 9
City Police (1-9 Officers)	None out of 10	-	-	-
City Police (10-49 Officers)	3 out of 17	2 out of 3	None out of 2	1 out of 2
City Police (50+ Officers)	15 out of 31	13 out of 15	4 out of 13	2 out of 13
50 Largest Cities	12 out of 21	10 out of 12	3 out of 10	2 out of 10
Township Police	1 out of 1	1 out of 1	1 out of 1	None out of 1

Response Analysis:

- From another question it was ascertained that the respondents were equally divided as to whether or not the Evidence Technicians should be assigned to the laboratory.

Finding:

- If the police department in a larger city has a crime laboratory, the probability is high that it also has a formal Evidence Technician program.
- Except among State Police and Sheriffs' Offices, Evidence Technicians are not often assigned to crime laboratories.

3. QUESTION:

a. Approximately what is your current budget?

For Personnel (Salaries) $________
For Personnel (Fringe Benefits) $________
For Operations $________
For Capital Improvement $________
TOTAL $________

b. Of the above, approximately how much or what percent is allocated to the Evidence Technician program?

$________ or ________ %

Response:

- a. Most agencies reported that budgetary data on evidence technicians is not available.
- b. Amount or % allocated to evidence technician work:

State Police - 4 agencies reported

Average: 9%
Maximum: 20%
Minimum: 1%

County Sheriff - 6 agencies reported

Average: 11%
Maximum: 29%
Minimum: 1%

City Police (1-9 Officers) - No data

City Police (10-49 Officers) - 3 agencies reported

Average: 7%
Maximum: 12%
Minimum: 3%

City Police (50+ Officers) - 3 agencies reported

Average: 4%

Maximum: 4.5%

Minimum: 3%

50 Largest Cities - 1 agency reported

7%

Township - 1 agency reported

1%

- The following response was made to the question: "If the money was available how would you change next year's allocation to E.T. work?"

	No Increase In Allocation	Increase Allocation	Decrease Allocation
State Police	3	2	0
County Sheriff	6	5	1
City Police (1-9 Officers)	1	0	0
City Police (10-49 Officers)	0	5	0
City Police (50+ Officers)	9	7	0
50 Largest Cities	6	10	0
Township	0	1	0
Total	25	30	1

- The following is a frequency distribution of the % of increase the agencies would like to make in the allocation of funds to E. T. work:

Nr. of Respondents	% Allocation Increase to E. T.
2	5-9%
7	10-19%
7	20-29%
2	30-39%
2	40-49%
5	100+%

Findings:

- Budget data concerning the functional activity of collecting evidence is generally unavailable.
- Slightly over half the agencies would like to increase their budget for this activity -- at an average increase of 37%.

TABLE XII-2
FREQUENCY DISTRIBUTION OF RESPONSIBILITY FOR COLLECTION OF PHYSICAL EVIDENCE AT THE SCENE*

		Patrolman	Detective	Evidence Tech.	Other
(From Q#1) Dept. With E. T. Program	Major Cases	6	19	39	5
	Narcotic and Dangerous Drugs	22	29	17	3
	Drinking Driving	39	3	7	0
	Auto Accidents	37	4	17	4

		Patrolman	Detective	Evidence Tech.	Other
Dept. With No E. T. Program	Major Cases	19	27	16	11
	Narcotic and Dangerous Drugs	30	30	7	7
	Drinking Driving	42	5	3	3
	Auto Accidents	39	4	3	4

* Many agencies cited two or more responsible persons.

TABLE XII-3
FREQUENCY DISTRIBUTION OF RESPONSIBILITY FOR COLLECTION OF PHYSICAL EVIDENCE BY AGENCIES

Type Agency	QUESTION: Does Agency have a formal E. T. program?	Responsibility for Major Cases							Responsibility for Narcotic & Dangerous Drugs Cases						
		Patrol-man	Detec-tive	Evid. Tech.	P/D	P/E. T.	D/E. T.	All Three	Patrol-man	Detec-tive	Evid. Tech.	P/D	P/E. T.	D/ E.T.	All Three
State Police	Yes: 4	-	-	1	-	-	2	1	-	1	-	-	-	2	-
	No: 6	-	-	-	-	-	3	-	-	1	-	1	-	-	1
County Sheriff, Police	Yes: 11	-	-	5	-	-	3	3	1	2	1	2	-	2	3
	No: 9	5	-	1	1	-	-	1	5	-	1	1	-	-	1
City (1-9 Officers)	Yes: -	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	No: 9	3	1	-	-	-	1	-	4	-	-	-	-	1	-
City (10-49 Officers)	Yes: 3	-	1	2	-	-	-	-	2	-	1	-	-	-	-
	No: 14	-	4	3	3	-	3	-	2	3	-	5	-	-	2
City (50+ Officers)	Yes: 15	-	1	7	-	-	5	-	1	3	-	5	2	1	1
	No: 17	-	6	2	3	-	-	1	-	6	-	7	-	-	-
50 Largest Cities	Yes: 14	-	-	9	-	1	3	1	2	6	-	1	1	1	2
	No: 7	-	1	1	1	1	1	1	-	1	-	2	1	-	1
Township	Yes: 1	-	-	1	-	-	-	-	-	1	-	-	-	-	-
	No: -	-	-	-	-	-	-	-	-	-	-	-	-	-	-

4. QUESTION:

In your agency, who is responsible for the collection of physical evidence at the scene? (Check all appropriate)

	Major Cases	Narcotic & Dangerous Drugs	Drinking Driving	Auto Accidents
Patrolman	☐	☐	☐	☐
Detective	☐	☐	☐	☐
Evidence Tech.	☐	☐	☐	☐
Other (Specify)	☐	☐	☐	☐

Response:

- At Table XII-2 is a tabulation of the agencies according to who is assigned responsibility at the crime scene.
- Of those agencies with a formal Evidence Technician program, the most common division of responsibility was:

  Major Cases - Evidence Technician
  Narcotics, etc. - Detective
  Drinking/Driving - Patrolman
  Auto Accidents - Patrolman

- The next most common arrangement was:

  Major Cases - Detective and Evidence Technician
  Narcotics, etc. - Patrolman and Detective
  Drinking/Driving - Patrolman
  Auto Accidents - Patrolman and Evidence Technician

- At Table XII-3 is a breakdown of the responses for Major Cases and Narcotics according to the type agency and whether or not it has an Evidence Technician program.

Finding:

- The establishment of a policy for the assignment of responsibility for the crime scene is a very complex matter -- particularly as it applies to Detective and Evidence Technicians.
- Many departments assign the responsibility to the senior officer present -- regardless of specific competence.

5. QUESTION:

Please complete the following table:

Offenses	No. Reported		No. or Percent handled by Evidence Technicians	
	1972	1973	1972	1973
Homicide, Rape,				
Robbery, Aggravated				
Assault				
Burglary, Larceny				
Auto Theft				
Arson				
Vandalism				
Narcotic Cases				
Driving Under The Influence				
Traffic Accidents				
Suicide				
Accidental/Natural				
Death				

Response:

- Because of wide differences in definitions and reporting procedures between various sized agencies, the Number of Cases Reported data is not included. The percent of the cases handled by Evidence Technicians is considered valid.

	% Handled by Evidence Technician
Homicide, Rape	50%
Robbery, Aggravated	50%
Assault	35%
Burglary, Larceny	65%
Auto Theft	35%
Arson	30%
Vandalism	20%
Narcotic Cases	35%
Driving Under the Influence	50%
Traffic Accidents	35%
Suicide	30%
Accident/Natural	30%
Death	30%

- This corroborates the material presented in Question 4, above.

6. QUESTION:

a. Which one of the following *most closely* describes where your Evidence Technicians are assigned? (Check one)

☐ Detective (Invest.) ☐ Administrative
☐ Operations ☐ Technical Service
☐ Patrol ☐ Other (Specify) ________

b. Is the Evidence Technician program considered to be a line or a staff function?

☐ Line ☐ Staff

Response:

- a. For the most part evidence technicians are assigned as detectives or are from technical services.

32	Detectives	7	Administrative
2	Operations	10	Technical Services
8	Patrol	1	Other

- b. 38 - Line
  27 - Staff

7. QUESTION:

a. What is the title of the individual who is the head of the Evidence Technicians?

____

b. What is the title of *his* immediate superior?

____

Response:

- Title of head of Evidence Technicians

15	Lieutenant
11	Sergeant
7	Captain
4	Evidence/Laboratory Technician

- Title of His immediate superior

11	Chief of Police
10	Captain
5	Director of Laboratory
5	Deputy Chief
5	Lieutenant

8. QUESTION:

Does the head of the Evidence Technicians perform any of the following administrative/managerial duties—for the various budgets indicated? (Check all appropriate)

	Personnel Budgets/ Ceilings	Operating Budgets	For Capital Funds
Design & Plan Budgets	☐	☐	☐
Submit & Defend Budgets	☐	☐	☐
Receive Allocations	☐	☐	☐
Responsible for Expend.	☐	☐	☐

Response:

- Very few heads of Evidence Technicians have any significant administrative responsibilities.

9. QUESTION:

Please complete the following manning table

Evidence Technician Position Title	Strength				Salary Range	
	Authorized		Actual			
	Permanent	Temporary	Permanent	Temporary	Min. $	Max. $

Response:

- Following is a frequency distribution of the number of agencies having the Evidence Technician strength as shown (Some laboratories with informal E. T. programs responded.)

Evidence Technician Authorized Strength, 1974

Agency	1-4	5-9	10-14	15-19	20+
State Police	4	1	1	-	2
County Sheriff	10	-	1	-	-
City (1-9 Officers)	1	1	-	-	-
City (10-49 Officers)	9	1	-	-	-
City (50+ Officers)	9	2	4	1	1
50 Largest Cities	4	2	7	3	3
Township	1	-	-	-	-
Total	38	7	13	4	6

- The mean authorized strength was 3.6 Evidence Technicians.
- The frequency distribution of salaries by position title and agency is as follows:

	$5,000-9,999	$10,000-14,999	$15,000+
State Police			
Evidence Technician	-	-	-
Crime Scene Invest.	1	1	-
Police Officer	-	2	-
Ident. Technician	-	-	-
Lab Technician	1	-	-
County Sheriff/Police			
Evidence Technician	1	4	-
Crime Scene Invest.	-	-	-
Police Officer	1	1	-
Ident. Technician	2	2	-
Lab. Technician	1	1	2
City (1-9 Officers)	No Figures Provided		
City (10-49 Officers)			
Evidence Technician	-	-	-
Crime Scene Invest.	1	1	-
Police Officer	5	2	1
Ident. Technician	-	1	-
Lab. Technician	-	-	-
City (50+ Officers)			
Evidence Technician	-	1	-
Crime Scene Invest.	-	-	-
Police Officer	1	4	-
Ident. Technician	2	-	-
Lab. Technician	-	-	2
50 Largest Cities			
Evidence Technician	-	1	-
Crime Scene Invest.	-	2	-
Police Officer	2	1	1
Ident. Technician	2	10	-
Lab. Technician	-	4	1
Township			
Police Officer	-	1	-

10. QUESTION:

How many newly authorized Evidence Technician positions have been created in your organization in the past four years? How many do you realistically anticipate creating in the next three years?

Newly Authorized Evidence Technician Position Titles	Actual				Anticipated		
	1971	1972	1973	1974	1975	1976	1977

Response:

- The following is a frequency distribution of new Evidence Technician positions created and planned -- by type agency.

	ACTUAL							ANTICIPATED					
Agency	0*	1	2	3	4	5	10+	0*	1	2	3	4	10+
State Police	1	-	-	1	1	-	1	2	-	1	-	1	1
County Sheriff	2	2	-	3	-	2	1	4	1	1	2	1	1
City (1-9 Officers)	1	-	-	-	-	-	-	-	1	-	-	-	-
City (10-49 Officers)	1	2	2	1	-	-	-	5	-	-	1	-	-
City (50+ Officers)	4	2	-	-	2	-	7	6	1	-	-	1	6
50 Largest Cities	2	1	2	2	1	1	6	5	1	1	-	3	5
Township	-	-	1	-	-	-	-	1	-	-	-	-	-
Total	11	7	5	7	4	3	15	23	4	3	3	6	13

* A zero indicates that no new positions are included in this period for a particular

agency, but some are included for the other period.

- During the period 1971-1974, 15 of the larger agencies began an Evidence Technician program or greatly expanded an existing program.
- 13 of the larger agencies are planning to begin an Evidence Technician program, or to greatly expand an old, stable program.

Finding:

- The rate of introduction or significant expansion of Evidence Technician programs among larger agencies was approximately 21% during the period 1971-1974 (an annual rate of 5%). The anticipated rate among the same size agencies is 18% for the period 1975-1977 -- representing an annual rate of 6%.
- Although only two of the smaller agencies showed a planned E.T. growth program, many expressed the need for such a program.

11. QUESTION:

On an annual basis, what is the average number of Evidence Technician positions vacated in your agency because of transfers, resignations, dismissals, and deaths? (Do not include those created because of newly authorized positions.) (Circle one)

1 2 3 4 5 6 7 8 9 10

Response:

- Following is a frequency distribution of the average number of Evidence Technician position vacancies per year -- on the basis of authorized strength.

Authorized Strength	Annual Evidence Technician Vacancies						Annual Mean
	< 1	1	2	3	4	5	
1-4 Positions (38 agencies)	26	7	5	-	-	-	.3
5-9 Positions (7 agencies)	3	4	-	-	-	-	.6
10-14 Positions (13 agencies)	1	4	5	3	-	-	1.8
15-19 Positions (4 agencies)	2	-	1	-	1	-	1.5
20+ Positions (6 agencies)	1	1	3	-	-	1	2.0

Finding:

- Evidence Technician programs experience a low turnover ratio in personnel.

12. QUESTION:

Assuming that the means were available would you increase or decrease next years allocation to Evidence Collection? (Check one)

☐ Increase Proportionate to Rising Cost
☐ Increase more than Proportionately by_______ % (Approximate)
☐ Decrease by________ % (Approximate)

Response:

- Following is the frequency distribution of answers by type agency.

	E. T. BUDGET INCREASE OR DECREASE					
Agency	Proportionate To Rising Costs	Increase More Than Proportionate By				Decrease
		1-5%	6-10%	11-30%	31+%	
State Police	3	3	1	1	1	-
County Sheriff	6	3	2	4	2	1
City (1-9 Officers)	1	-	-	-	-	-
City (10-49 Officers)	-	3	1	2	2	-
City (50+ Officers)	9	4	1	5	1	-
50 Largest Cities	6	2	2	5	2	-
Township	-	1	-	-	-	-
Total	25	16	7	17	8	1

Finding:

- Two thirds of the responding agencies would expand their Evidence Technician programs if the means were available.

13. QUESTION:

> Do you provide any of the following to your Evidence Technicians?
>
> ☐ Car ☐ Overtime Pay
>
> ☐ Car Allowance ☐ High Hazard Play
>
> ☐ Shift Differential

Response:

• 30	Car
3	Car Allowance
40	Overtime Pay
2	Hazard Pay
11	Shift Differential

14. QUESTION:

a. Do you conduct on-the-job training for your Evidence Technicians?

☐ Yes ☐ No

b. If "yes", is the training formalized to include outlines and reading assignments?

☐ Yes ☐ No

c. Please indicate the type of Evidence Technician subjects covered and the source of instructors.

Response:

- 58 agencies conduct on-the-job training programs.

  Two thirds of them have a formalized program.

- Common subjects taught, include:

  Photography

  Fingerprints

  Evidence Collection

  Crime Scene Search

  Sketching

  Casting

  Firearms & Toolmarks

  Trace Evidence

  Blood Stains/Semen

15. QUESTION:

a. Do you provide an educational allowance for Evidence Technicians taking courses outside of your agency?
☐ Yes ☐ No
b. If "yes", is this allowance in the form of: (Check all appropriate)
☐ Tuition Support ☐ Time Off
☐ Text Book Support ☐ Other (Specify) ______

Response:

- a. 49 agencies reported that they provide education allowances to their E.T.'s. However, it is not known whether or not this allowance is different from a department - wide policy.
- b. 37 Tuition Support
  15 Text Book Support
  12 Time Off
  3 All Three

16. QUESTION:

Do you provide education and training for individuals and agencies other than your own?
☐ Yes ☐ No

Response:

- Less than one third of the agencies provided training for individuals outside their own agency.

Finding:

- Very few agencies appear to pool their training programs with neighboring jurisdictions.

17. QUESTION:

If the means were available, what improvements would you make in your Evidence Technician program? (Please show in priority — 1., 2., 3., etc.)

1. ______________________
2. ______________________
3. ______________________
4. ______________________

Response:

Suggested improvements were cited as follows:

Suggested Improvement	Priority			
	1st	2nd	3rd	4th
Increase Training/Education	18	7	4	0
Increase Personnel	12	4	4	2
Increase Equipment	8	9	1	2
Expand Work space/ Facilities	2	3	2	1
Expand Capabilities	2	2	1	0

Finding:

- The majority of the agencies would like to increase the education and training of their Evidence Technicians and to increase the E.T. program strength.

18. QUESTION:

In what areas of evidence collection do you feel that research is needed?
____
____

Response:

8 Fingerprints (Methods for lifting and preserving, prints from clothing, prints from skin and automation of latent print searches).

6 Firearms (Ballistics, gunshot residue and residue from 22 cal. hand guns).

3 Tools (Tool impressions, effective/practical tools for evidence collection, equipment to obtain evidence without contaminating same).

9 Evidence (Handling and preserving of evidence).

3 Crime Scene Search (Better methods and programs of instruction).

7 Type Cases (Felony, Homicide, Burglary, Robbery).

8 Misc. (On-the-job training, universal container packaging, coordination between patrol personnel and evidence technician, teaching importance of scientific evidence to law enforcement personnel).

Finding:

- The most common research needs of E.T. agencies include: the handling and preservation of evidence; fingerprint techniques (plus automation of search); and firearms.

SEVEN EXAMPLES OF JOB DESCRIPTIONS FOR PERSONNEL ASSIGNED TO CRIME SCENE SEARCH DUTIES.

EXAMPLE 1.

GENERAL ORDER FOR AGENCY EMPLOYING A MOBILE CRIME LABORATORY

Part I

A. Investigation of Crime Scenes

1. Personnel of the Mobile Crime Laboratory Section, Technical Services Bureau, shall, in addition to performing such duties as directed by the Technical Services Officer, be responsible for processing scenes of the following type crimes:

   a. Deaths of a violent or suspicious nature or unidentified persons.

   b. Rapes.

   c. Critical injury assaults.

   d. Armed robberies

   e. Burglaries when there is physical violence or loss of property in excess of $5,000.00

   f. Other major offenses (i.e., bombings, arson, assassinations).

2. It shall be the responsibility of the officer making the report and/or the preliminary investigation at a crime scene to notify the Mobile Crime Laboratory Section of cases required to be processed by the technicians of that section.

3. Members of the force shall be aware that when conditions prohibit a member of the Mobile Crime Laboratory Section from responding to the scene of a crime as set forth in part I, paragraph 1, of this order, the official in charge of the Mobile Crime Laboratory Section may authorize a crime scene search officer to respond and process the case. Officers trained in crime scene searches are designated as crime scene search officers.

4. In crimes other than those listed in part I, paragraph 1 of this order, the officer making the report and/or preliminary investigation shall arrange through the radio dispatcher for the services of a crime scene search officer. In the event there are no search officers available, the officer shall notify the station clerk of the organizational element in which the crime occurred who shall record the information on a crime scene search book maintained for that purpose. The officer shall note the notification on his report.

5. Officers investigating and/or reporting crimes which require the services of either the Mobile Crime Laboratory or a district crime scene search officer shall protect the crime scene in order to prevent the destruction or contamination of evidence. The officer(s) shall not disturb any articles, marks, or impressions of potential evidentiary value and shall initiate security measures to keep unauthorized persons away from the immediate area of the crime scene until all evidentiary measurements, sketches, photographs, searches, and collections have been made.

B. Handling of Potential Evidence

1. All police officers who handle potential evidence must realize that the admissibility of that evidence in a court of law will depend, in large part, not only on the manner in which it was collected, but also on the precautions taken to insure its integrity.

2. The testimony supporting such evidence must show that the specimen was either found at the crime scene or is otherwise related to the crime. This testimony must also demonstrate to the satisfaction of the court that the evidence was not altered and that it can positively be identified and distinguished from all other similar items. Consequently, after properly collecting and marking the evidence for future identification, it is essential to account for all persons who have handled, examined, or stored the evidence in order to insure its subsequent admissibility. The "chain of possession" begins with the discovery of the evidence and continues until its presentation in court. If any link in this chain is unknown or unaccounted for, the integrity of the evidence can be threatened and it may well be ruled inadmissible.

3. Establishment and protection of this chain of possession can be achieved by limiting the number of persons who handle the evidence between discovery and court presentation: by keeping complete personal notes

regarding any transfer of possession of the evidence: by marking the evidence, if appropriate: by maintaining a receipt system and by checking the condition and identity of evidence returned to be certain that it is the evidence originally turned in and that it is in the same condition as at the time of discovery. It is the responsibility of all police officers to insure the integrity and subsequent admissibility of such evidence.

C. Motor Vehicles.

1. Motor vehicles involved in the commission of those crimes listed in part I, paragraph 1 of this order shall be processed by the Mobile Crime Laboratory Section. Motor vehicles involved in crimes, other than those listed in part I, paragraph 1, of this order, shall be processed by a crime scene search officer upon the request of the investigating officer.

2. All recovered stolen motor vehicles shall be processed, at the time of recovery, for latent fingerprints and other physical evidence by a crime scene search officer from the district in which the motor vehicle was recovered.

3. In cases where motor vehicles are taken to the basement in Headquarters to be processed by the Identification Branch it shall be the responsibility of the officer requesting the service to make the necessary arrangements with the Identification Branch and to have the vehicle removed after it is processed.

D. Requests for Latent Fingerprint Examination.

1. Officers shall request a latent fingerprint examination in those cases where through investigation or information from a reliable source, they have developed a suspect to a particular crime or series of crimes. All requests for a latent fingerprint examination shall be submitted in accordance with the following procedures:

a. The Police Department I.D. No. must be noted in the blank provided. If the suspect has never been processed through the Identification Branch of this department, but is believed to have an out-of-town record, the Files Section of the Identification Branch shall be notified prior to submitting the form.

b. The mobile crime search number shall be noted in the blank provided on the form. Members of organizational elements utilizing a crime scene search file shall obtain the crime scene search number from the corresponding Evidence Report when the examination is in regard to an offense committed in their districts. Other members of the department shall obtain the crime scene search number through the Mobile Crime Laboratory Section.

c. The date that the offense occurred shall be listed in the blank provided.

d. Type of offense is designated by checking the applicable blank of the offenses listed on the form. In the event a suspect is wanted for an offense not listed on the form, the requesting officer shall write the offense on the face of the form in a conspicuous place.

e. All other information needed for the submission of the form is self-explanatory.

2. Members of organizational elements utilizing a crime scene search file shall submit all completed forms to their commanding officers or other members designated by him. Members of organizational elements not maintaining a crime scene search file shall submit their forms directly to the Latent Fingerprint Section of the Identification Branch.

3. In the event an officer has reliable information on a suspect but insufficient information to complete the form, the requesting officer shall contact the Files Section of the Identification Branch for assistance.

Part II

A. Crime Scene Search Officers.

1. Each crime scene search officer shall be responsible for the proper maintenance of his physical evidence kit and shall draw supplies from the Mobile Crime Laboratory Section when necessary. Upon being relieved of his assignment as a crime scene search officer, he shall be responsible for surrendering his kit to the Mobile Crime Laboratory Section.

2. Crime scene search officers shall, upon the completion of their investigation, telephone the Mobile Crime Laboratory Section and supply the necessary information for their records. Such officers shall then prepare the appropriate reports reflecting the action taken and the evidence recovered and forward these reports along with the evidence collected to the Mobile Crime Laboratory Section for processing.

3. To insure the chain of possession, the district crime scene search officers shall handle evidence in the following manner:

a. Latent fingerprints shall be placed in the print jacket furnished for that purpose after having been properly marked for evidence. The search officer shall complete the Evidence Report, in an original and two copies, and place them with the print jacket into the preaddressed cover jacket. This shall be sealed and forwarded to the Latent Fingerprint Section of the Identification Branch.

b. The Latent Fingerprint Section of the Identification Branch will evaluate all latent fingerprints as to being identifiable, note this on the second copy of the form which shall be returned to the crime scene search officer and maintained in the crime scene search file. After receiving the results, the crime scene search officer shall then forward all information to the officer in charge of the investigation.

c. All evidence requiring laboratory examination collected by the district crime scene search officers shall be delivered in person to the Mobile Crime Laboratory for processing. The evidence must be accompanied by a form unless one has been mailed with latent fingerprints in the same case. Evidence not requiring processing by the Mobile Crime Laboratory shall be processed through the Property Division. Crime scene search officers recovering property shall comply with the provisions of General Order -- Property Order.

4. When notified of the seizure of a suspected narcotic drug, and if not engaged in searching a crime scene, crime scene search officers shall respond and assist the arresting or seizing officers in identifying the suspected drug. Additionally, crime scene search officers shall provide the arresting or seizing officer with a list of procedures to follow in processing the suspected drug and shall prepare a Evidence Report to reflect the same information contained in Report of Property Collected, Purchased or Seized prepared by the arresting or seizing officer.

5. Crime scene search officers shall not conduct identifying field tests on narcotic drugs seized as the result of a raid; when a large quantity of narcotic drugs are seized; nor when a vice officer or narcotic officer has had previous contact with the suspected narcotic drugs.

6. While in the process of testing suspected heroin or other opium derivatives, crime scene search officers shall wear an approved pair of surgical gloves and approved safety glasses in that this test involves the use of concentrated sulfuric acid. All tests of this nature shall be conducted in a location easily accessible to water in the event acid is spilled on exposed skin.

7. Upon concluding their test of suspected narcotic or dangerous drugs, crime scene search officers shall furnish the arresting or seizing officer with the Mobile Crime Laboratory number assigned to the test for inclusion in the report of the arresting or seizing officer.

8. Crime scene search officers shall frequently contact the station clerks of their organizational element to ascertain if there are any pending assignments in need of processing.

B. Mobile Crime Laboratory Section.

1. The Mobile Crime Laboratory Section shall be responsible for maintaining an appropriate file documenting actions taken at all crime scenes. Such files shall reflect a complete inventory of all items taken as evidence and the results of any examination made of such evidence.

2. The Mobile Crime Laboratory Section shall forward to the appropriate agency any evidence which cannot be processed or analyzed by this department.

3. The Mobile Crime Laboratory Section shall document in records maintained at their element all calls on which their service is required. The records shall reflect at a minimum the following information:

a. Complaint number.

b. Complainant

c. Address.

d. Telephone number.

e. Type of offense.

f. Reporting officer.

g. Receiving officer.

h. Officer assigned to process case.

Part III

A. Commanding Officers.

1. Commanding officers of districts shall:

a. Insure that at least one crime scene search officer is available on each tour of duty.

b. Provide the station clerk with a list of the names of all crime scene search officers.

c. Study crime patterns in their respective districts in regard to modus operandi in order to develop suspects.

d. Maintain a crime scene search book in the station clerk's office for the purpose of logging crime scenes which have not been processed by a crime scene search officer and which require his services.

e. Maintain or cause to be maintained a crime scene search file which shall consist of the forms which are returned to the organizational element by the Mobile Crime Laboratory Section.

f. Insure that all requests for Latent Fingerprint Examinations are reviewed. The purpose of this is twofold:

(1) Check the crime scene search file for the corresponding form to ascertain if there are identifiable prints.

(2) Insure that duplicate requests shall not be made.

2. The Official In Charge of the Mobile Crime Laboratory Section shall issue each crime scene search officer physical evidence kits for use in conducting crime scene searches and the identification of narcotic and dangerous drugs, make periodic inspections of the kits, and maintain necessary control over the supplies and equipment.

B. Training Division.

It shall be the responsibility of the Training Division working with the members of the Mobile Crime Laboratory Section to train a sufficient number of officers in each district to qualify in the searching of crime scenes, the processing of latent fingerprints, and the identification of narcotic and dangerous drugs.

EXAMPLE 2

GENERAL ORDER FOR
AGENCY EMPLOYING EVIDENCE TECHNICIANS OPERATING
OUT OF A CRIMINALISTICS LABORATORY

I. PURPOSE

This order:

A. outlines the operation and procedures of the Evidence Technician Section of the Criminalistics Division and clarifies its relationship to other units of the Department.

B. establishes the Evidence Report and provides for its use and distribution.

II. ORGANIZATION AND COMMAND

A. The commanding officer of the Evidence Technician Section will:

1. report directly and be responsible to the Director of the Criminalistics Division.

2. ensure evidence technicians are properly certified to operate the chemical breath tester.

3. provide for the security and maintenance of Department equipment relating to the evidence technician functions.

B. Supervising sergeants of the Evidence Technician Section will be responsible for:

1. ensuring that the appearance and actions of the evidence technicians exemplify Department goals and standards.

2. reviewing all reports submitted to ensure complete and proper handling of assigned cases.

3. correcting individual deficiencies in the handling of evidence which comes directly to their attention.

4. providing the Communications Center with a list of Area assignments of all evidence technicians under their supervision.

5. training and guiding their subordinates, creating a high level of efficiency through proper field supervision.

6. making weekly inspections to ascertain if all equipment assigned to the Evidence Technician Section is being properly maintained.

7. completing a Command & Supervisor's Field Log and submitting it to the Commanding Officer of the Evidence Technician Section.

III. ASSIGNMENT AND DUTIES OF EVIDENCE TECHNICIANS

A. The Commanding Officer of the Evidence Technician Section will:

1. assign one or more evidence technicians to a particular Area on the basis of the need for services, ensuring that at least one evidence technician is assigned to each Area on each watch.

2. constantly observe work loads in each Area and recommend assignment changes when the need is indicated.

B. Evidence Technicians will operate in assigned Areas on all watches and report to the designated city wide dispatch who will issue assignments and maintain their status of availability. Their tours of duty will be arranged to meet the requests for service during peak work load hours. They will report "on" and "off the air" for all purposes to the dispatcher.

C. Evidence technicians will normally patrol and receive assignments in one Area. When their services are required in other Areas they will be dispatched as needed by the Communications Center.

D. When not assigned, but on patrol, evidence technicians will proceed to the scene of any reported incident in their Area wherever evidence is likely to be found. If after arriving on the scene their services are needed, they will report off the air informing the dispatcher of the nature and location of the incident. They will also take proper police action when incidents are observed while on patrol.

E. Evidence technician service will consist of:

1. the search for, collection, identification, preservation and inventory of physical evidence which they have recovered.

2. taking photographs and measurements when they are indicated by the nature of the investigation.

3. video taping and recording activities occurring during spontaneous incidents.

4. completing the Evidence Report.

5. completing the Property Inventory in the district of occurrence when there is physical evidence involved, which the technician has recovered, noting the name of the investigating officer(s).

6. obtaining and inserting the RD number on the Evidence Report and Property Inventory.

7. placing all evidence, insofar as possible, in an appropriate container.

8. having their supervising sergeant check their reports and authorize the submission of evidence for laboratory analysis.

9. distributing the Evidence Report as follows:

    a. the Criminalistics Division copy, the Identification Section copy and the Criminal Investigation Division copy will be sent to the laboratory with any fingerprints, physical evidence, and/or crime scene photography. When no evidence is submitted the above copies will be destroyed.

    b. the Evidence Technician Section copy will be filed in the Evidence Technician Section.

F. Evidence technicians will not participate in other aspects of investigations but will confine their activities to matters directly related to evidence technician service.

G. Whenever an evidence technician determines that the nature of the investigation is beyond his capacity, he will request the dispatcher to assign a mobile unit from the Criminalistics Division.

H. Evidence technicians will perform all of their duties outlined in the General Orders on:

1. Traffic Accident Investigation

2. Chemical Breath Testing
3. Line-up Procedures

IV. PHYSICAL EVIDENCE DEFINED

Physical evidence is any object, marking, or impression, no matter how small, which may assist in the reconstruction of the crime or which may lead to the identification of the offender or connect the offender with the victim or scene of the crime and which may require laboratory processing to render it usable in the investigation or in court. Physical evidence must not be disturbed until the arrival of the technician, unless necessary in order to protect it from loss or damage.

V. RESPONSIBILITIES OF FIELD PERSONNEL

A. Whenever any officer of the Department conducting a preliminary or a follow-up investigation determines that the service of an evidence technician is required, he will contact the dispatcher and request that an evidence technician be assigned.

B. The requesting officer will:

1. protect the scene.
2. submit all necessary reports, including the name of the assigned evidence technician in these reports. Whenever evidence obtained by the evidence technicians aids an investigation or is used in the prosecution of a case, the officer will include this fact in the Supplementary Report which reports the disposition.

C. Supervising sergeants and field lieutenants will:

1. ensure that evidence technician service is requested when this service is indicated by the circumstances of the case.
2. provide the evidence technician with the assistance necessary to perform his function whenever conditions indicate the need.
3. be responsible for releasing evidence technicians from the scene of an investigation when satisfied that the service rendered is complete.

VI. COMMUNICATIONS CENTER

The Commanding Officer of the Communications Center will be responsible for determining the internal procedures necessary for the designated city wide dispatcher to dispatch evidence technicians and maintain their availability status.

EXAMPLE 3

JOB DESCRIPTION FOR "CRIMINALISTS"

SCOPE:

This series specification describes six Criminalist classes used primarily by the Department of Justice. These classes are used for positions that conduct and supervise complex technical laboratory analyses in connection with the identification of criminals and investigation of crimes.

DEFINITION OF SERIES:

Criminalists conduct examinations of crime scenes for physical evidence and complex cases, make all types of chemical analyses such as alcohol determinations, toxicological analyses of foods and body viscera and fluids, tests for drugs and explosives, and various types of microchemical tests; make the difficult microscopic, chemical, and serological tests on blood and other physiological fluid stains; identify and compare hair, fibers, soil, paint, glass, building materials and other substances in forensic cases; make visual, microscopic and other technical examinations and comparisons of tool marks, firearms and other weapons, bullets, cartridge cases and ammunition; make casts; make and develop photographs and photomicrographs using black and white and color films; use complex measuring, recording and testing instruments and devices; prepare evidence and exhibits and testify in court as expert witnesses; assist local law enforcement officers and prosecutors in analyzing and interpreting evidence; write reports and correspondence; give instruction in this field at peace officer training schools.

CLASS	LEVELS DESCRIPTIONS
CRIMINALIST TRAINEE	This is the entry and training level for new criminalistics with little or no criminalistics experience.
CRIMINALIST I	This is the subjourneyman level. Under general direction Criminalists I will perform routine technical laboratory analyses and assist higher level criminalists in the examination of crime scenes and in the scientific investigations of

CLASS	LEVELS DESCRIPTIONS - Contd.
	crimes. Incumbents will be expected to promote to Criminalist II as they become fully trained and have gained the necessary planned experience.
CRIMINALIST II	This is the first journeyman level in the series. Incumbents are assigned to less complex criminalist analyses.
CRIMINALIST III	This the full journeyman in the series. Incumbents are assigned to the more complex criminalist analyses. In some settings, incumbents may work as leadmen to supervise and/or coodinate the work of lower level criminalists.
CRIMINALIST IV	Plans, organizes and directs the technical operation and management of the average-sized regional laboratory. In the largest and most complex regional and metropolitan laboratories he may be assigned as the working supervisor over the criminalists section.
CRIMINALIST V	Plans, organizes and directs the technical operation and management of only the largest and most complex regional and metropolitan laboratories.

	MINIMUM QUALIFICATIONS
CRIMINALIST TRAINEE	Education: Equivalent to graduation from college with a major in one of the physical sciences, including the equivalent of eight semester hours of general chemistry and three semester hours of quantitative analysis.

CLASS	MINIMUM QUALIFICATIONS - Contd.
CRIMINALIST I	Either I Six months' experience in the state service performing the duties of a Criminalist Trainee. Or II Experience: One year of professional experience in a physical sciences laboratory setting performing the duties of a chemist, biochemist or a related position. This experience must have included independent responsibility for making quantitative and qualitative analysis; and Education: Equivalent to graduation from college with a major in one of the physical sciences, including the equivalent of eight semester hours of general chemistry and three semester hours of quantitative analysis.
CRIMINALIST II	Either I Two years of experience in the state service performing the duties of a Criminalist Trainee. Or II Experience: Three years of professional experience beyond the trainee level in a physical sciences laboratory setting performing the duties of a chemist, biochemist or a related position. This experience must have included at least one year as a criminalist having independent responsibility for making quantitative and qualitative analyses. (One year of postgraduate education in one of the physical sciences may be substituted for one year of the required general experience.) and Education: Equivalent to graduation from college with a major in one of the physical sciences, including the equivalent of eight semester hours of general chemistry and three semester hours of quantitative analysis.

CLASS	MINIMUM QUALIFICATIONS - Contd.
CRIMINALIST III	Either I Two years of experience in the state service performing the duties of a Criminalist II. Or II Experience: Four years of professional experience beyond the trainee level in a physical sciences laboratory setting performing the duties of a chemist, biochemist or a related position. This experience must have included at least two years as a criminalist having independent responsibility for making quantitative and qualitative analyses. (One year of postgraduate education in one of the physical sciences may be substituted for one year of the required general experience.) and Education: Equivalent to graduation from college with a major in one of the physical sciences, including the equivalent of eight semester hours of general chemistry and three semester hours of quantitative analysis.
CRIMINALIST IV	Either I One year of experience performing the duties of a Criminalist III. Or II Experience: Broad and extensive (more than five years) of professional experience in a physical sciences laboratory setting performing the duties of a chemist, biochemist or a related position. This experience must have included at least two years as a supervising criminalist. (One year of postgraduate education in one of the physical sciences may be substituted for one year of the required general experience.) and Education: Equivalent to graduation from college with a major in one of the physical sciences,

CLASS	MINIMUM QUALIFICATIONS - Contd.
	including the equivalent of eight semester hours of general chemistry and three semester hours of quantitative analysis.
CRIMINALIST V	Either I One year of experience performing the duties of a Criminalist IV. Or II Experience: Broad and extensive (more than five years) of professional experience in a physical sciences laboratory setting performing the duties of a chemist, biochemist or a related position. This experience must have included at least two years as a supervising criminalist. (One year of postgraduate education in one of the physical sciences may be substituted for one year of the required general experience.) and Education: Equivalent to graduation from college with a major in one of the physical sciences, including the equivalent of eight semester hours of general chemistry and three semester hours of quantitative analysis.

CLASS	KNOWLEDGES AND ABILITIES
ALL LEVELS	Knowledge of: Scientific methods and techniques used in examing crime scenes; tests for the identity and comparison of blood and physiological fluids; tests for explosives and flammable materials; toxicological analyses; tests of hair and fibers, glass, soil, paint, and similar materials, and equipment necessary to conduct these tests; modern methods and techniques in investigations of major crimes; current trends in toxicology, general chemistry and microchemistry; modern types of small arms and the techniques of conducting all types of firearms, bullet, and tool mark comparisons; methods used in the examination of documents in

CLASS	KNOWLEDGES AND ABILITIES - Contd.
	criminal cases; photographic and photomicrographic principles and practices as applied to criminalists; chromatographic techniques.

	SPECIAL PERSONAL CHARACTERISTICS
ALL LEVELS	Tact, patience, keenness of observation, normal vision or vision corrected to normal, and normal color vision.

EXAMPLE 4

JOB DESCRIPTION FOR
"POLICE SERVICES TECHNICIAN"
(CIVILIAN)

A. General Statement

This is a civilian position involving supportive services and assistance to line operations. Technical and clerical duties range from simple to complex and a variety of equipment and office machines are used. Individuals must be able to meet and deal effectively with the public during the course of their assignments which do not require the presence of a sworn police officer. While supervision is available by a police officer, the incumbents may be radio dispatched and are expected to perform according to established regulations. Incumbents are expected to act with mental acuity, dispatch and resourcefulness. Work assignments include shift, weekend and holiday work according to the needs of the Department.

B. Specific Functions: Summary

A Police Services Technician

1. is dispatched to crime scenes or to locations of recovered evidence to search for and recover physical evidence under general direction; inventories, logs and turns in recovered property and evidence; contacts property owners for release of property;
2. may dust for and preserve latent fingerprints; photograph or sketch crime scenes, traffic accidents and gather other types of physical evidence;
3. is dispatched to take reports on a variety of calls for service where the presence of a sworn peace officer is not required;
4. takes fingerprints and photographs; classifies fingerprints; compares latent prints with fingerprint records and establishes identifications;
5. may work in radio room receiving telephone calls for police assistance and taking reports on matters not requiring a field unit dispatch;
6. investigates and reports on traffic accidents where presence of a sworn peace officer is not required; directs traffic flow at an intersection, traffic post or congested area;
7. answers questions asked by the general public; assists juveniles and adults by counseling and referring them to other agencies for assistance, questions and elicits information from citizens for reporting purposes;

8. performs traffic marking including the daily posting of construction zones and other no-parking areas;
9. issues misdemeanor citations as required;
10. may perform security checks on vacationers' homes and mercantile establishments.

EXAMPLE 5

JOB DESCRIPTION FOR

"FORENSIC TECHNICIAN"

Search for and development of latent fingerprints.

Examining and developing evidence of crime, such as tool and instrument marks, tire treads, footprints, blood, semen and other trace material and arranging delivery to the Crime Laboratory Section.

Photographing crime scenes.

Photographing and fingerprinting, for identification, all evidence or suspected homicide victims.

Safeguarding, marking, labeling, identifying and packaging of firearms and related evidence recovered in all cases of death or personal injury by firearms and arranging delivery to the Ballistics Section.

Examining clothing and other objects for powder residue, bullet trajectory and other scientific evaluation.

EXAMPLE 6

JOB DESCRIPTION FOR "IDENTIFICATION TECHNICIAN I, II"

IDENTIFICATION TECHNICIAN I

NATURE OF WORK

This is beginning level technical work in criminal identification. This is a civilian classification in the Police Department.

Work involves performing a variety of tasks in criminal identification. Work is performed under close supervision of a technical or administrative superior but employees of this class may work with some independence as work methods and procedures are learned. At least 50% of the work must be in the identification area to meet the specifications for this class.

EXAMPLES OF WORK PERFORMED

Rolls prisoners' fingerprints; classifies fingerprints; researches fingerprint and other files for pertinent identification information.

Takes and enlarges photographs of fingerprints; photographs prisoners; develops film; prints photographs.

Processes applications for taxi cabs and firearm permits.

Types identification cards, prepares records, and performs a variety of clerical tasks as required.

Performs related work as required.

DESIRABLE KNOWLEDGES, ABILITIES, AND SKILLS

Some knowledge of identification practices and procedures.

Some knowledge of the various equipment and work aids connected with criminal identification.

Ability to develop skill in the use of various types of cameras and equipment used for developing printing and enlarging photographs.

Ability to take and compare fingerprints and identification data accurately.

Ability to establish and maintain effective working relationships with co-workers, police officers and the general public.

Ability to carry out oral and written instructions.

Skill in the use of common office machines including typewriters.

IDENTIFICATION TECHNICIAN II

NATURE OF WORK

This is technical work in criminal identification. This is a civilian classification in the Police Department.

Work involves performing a variety of tasks in criminal identification. Work is performed under the general supervision of a technical or administrative superior, however employees work with considerable independence following standard work methods and procedures. An employee of this class may testify in court as an expert witness.

EXAMPLES OF WORK PERFORMED

Rolls prisoners' fingerprints and takes fingerprints of cadavers; classifies fingerprints and searches fingerprint and other files to determine whether or not persons have police records.

Takes and enlarges photographs of fingerprints; prepares exhibits of evidence; testifies in court as an expert witness.

Compares latent fingerprints with those of suspects.

When required visits crime scenes to search for, develop, photograph and lift latent fingerprints; photographs crime scenes and makes plaster casts of footprints and tire tracks.

Photographs prisoners, develops film and prints photographs.

Processes applications for taxi cabs and firearm permits; test fires firearms for ballistic comparisons.

Types identification cards, prepares records and performs a variety of other clerical work as assigned.

Performs related work as required.

DESIRABLE KNOWLEDGES, ABILITIES, AND SKILLS

Knowledge of identification practices and procedures.

Knowledge of the various equipment and work aids connected with criminal identification.

Ability to take and compare fingerprints and identification data accurately.

Ability to establish and maintain effective working relationships with co-workers, police officers and the general public.

Ability to carry out complex oral and written instructions.

Skill in the use of various types of cameras and equipment used for developing,printing and enlarging photographs.

EXAMPLE 7

JOB DESCRIPTION FOR "FINGERPRINT-EVIDENCE TECHNICIAN"

THE POSITION: Under supervision of a Criminalist to collect and preserve physical evidence at crime scenes, using scientific methods and approaches; to lift, process and photograph latent fingerprints; and to perform related work as required.

DESCRIPTION: Apply current methods and techniques provided by the laboratory.
Use photography at the crime scene.
Use modified Henry System of fingerprint classification.
Develop latent prints.
Use all varieties of cameras, magnifiers, casting equipment, serial number restoration equipment.
Prepare reports.
Testify as an expert witness in court.

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